



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

AUG 22 2006

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Mr. Tadamitsu Umeno  
Member of City Assembly  
Prism Tower 1203  
390-3 Hondosu-machi  
Tosu-shi  
Saga-ken, Japan, 841-0026

Dear Mr. Umeno:

This is in response to your inquiry to Mr. Max Weintraub, Regional PCB Coordinator for the U.S. Environmental Protection Agency (EPA) Region 9 regarding "US EPA ID NUMBER HIP 000108407" dated June 27, 2006 concerning the Terada Environmental Laboratory (Terada) PCB Disposal Approval (permit) procedure. As Mr. Shunichi Terada informed you, Terada demonstrated the Terada PCB disposal technology during the period from May 28<sup>th</sup> to June 1<sup>st</sup>, 2001, in an attempt to obtain a PCB Disposal Approval from EPA. For the reasons described below, EPA did not issue an Approval or any official certificate or letter certifying the efficacy of the Terada PCB process. An Approval would authorize the Permittee to operate their process equipment under the Toxic Substance Control Act (TSCA). Terada performed three tests in the presence of my staff who collected split samples of the transformer waste oil and the treated transformer waste oil. The table in Appendix A presents the results of the tests which are a summary of the data in the sampling log provided in Appendix B.

Results of the Terada tests indicate little reduction in the concentration of PCBs in the transformer oil. In some instances, the PCB concentration increased after treatment. One possible explanation for this phenomenon may be by the chemical reaction of the alkali reagent with the oil, termed saponification, similar to the production of soap. Only a portion of the transformer oil would be saponified and then emulsified or "dissolved" in the reagent. Because the reagent does not saponify PCBs, the PCBs remain in the transformer oil raising the PCB concentration in the remaining transformer oil.

To be eligible for an EPA PCB Disposal Approval under TSCA, a chemical dechlorination technology such as the Terada process must destroy PCBs as well as an incinerator or must be equivalent to an incinerator. The Applicant, Terada, must demonstrate that the process meets the EPA criteria of 2 ppm PCB in the treated material. The Terada process did not achieve this level and consequently does not qualify for a PCB Disposal Approval.

To clarify the issuance of the EPA ID number HIP 000108407, the EPA Region 9 office under the Resource Conservation and Recovery Act (RCRA) issued this provisional number, which is valid for 90 days, jointly to Terada and the Ewa Nui Substation, owned by the Hawaiian Electric Company, Inc. (HECO). Upon completion of the PCB Disposal Demonstration at the Ewa Nui Substation, Terada was responsible for the disposal of all waste generated during the demonstration tests, including hazardous waste. To transport and to dispose of hazardous waste, the generator of the hazardous waste must possess an EPA ID number. Thus, HECO requested the Region 9 office (Tetra Tech EM, Inc. is the EPA contractor) for a provisional or temporary EPA ID number on behalf of Terada. The request named Mr. Shigeo Seki, Vice President, as the Terada representative (see Enclosure 1). The Uniform Hazardous Waste Manifest presented in Enclosure 2 clearly identifies the owner of the EPA ID number HIP 000180407 to be Terada, signed by Mr. Seki, and transporting sodium hydroxide contaminated hazardous waste to Chemical Waste Management located in Kettleman Hills, California, USA. Manifests are legal forms used to record the shipment of hazardous waste from one location to another. Lastly, this provisional ID number was issued on November 1, 2001 and because provisional numbers are valid for 90 days, the EPA ID number HIP 000108407 is no longer valid.

Please contact Hiroshi A. Dodohara of my staff at (202) 566-0507 if you have any questions pertaining to this correspondence.

Sincerely,



Maria J. Doa, Ph.D.  
Director  
National Program Chemicals Division

Enclosure

cc: Max Weintraub, PCB Coordinator  
EPA Region 9

Andrew Keith  
Hawaiian Electric Company, Inc

Appendix A  
 Test Results from the Terada Environmental Laboratory  
 PCB Disposal Demonstration at the  
 Hawaii Electric Company  
 Ewa Nui Substation  
 May 28 -- June 1, 2001

<u>RUN NO.</u>	<u>Initial PCB Concentration</u> <u>Untreated Oil, ppm</u>		<u>Final PCB Concentration</u> <u>Treated Oil, ppm</u>	
	<u>Terada<sup>1</sup></u>	<u>EPA</u>	<u>Terada<sup>2</sup></u>	<u>EPA</u>
1A	10,200	6,530	11,000	7,610
1B	13,300	2,430	11,500	8,360
1B Dup	13,300	2,390	15,000	8,100
2A	17,000	18,100	15,500	10,100
2B	20,000	26,800	25,300	10,100
2B Dup	20,000	-	25,300	-
3A	35,000	43,700	39,500	21,300
3B	40,000	17,800	29,100	17,900
3B Dup	40,000	-	29,300	-

<sup>1</sup> Analysis by Hawaii Electric Company on behalf of Terada

<sup>2</sup> Analysis by S.D. Myers, Terada contractor

Dup means duplicate analysis

Appendix B  
Sampling Log from the TSCA Demonstration Tests

Test Run	Sample ID	Sample Date	Sample Time	Shipment Date	Sample Matrix	Initial PCB1 Concentration (mg/kg) <sup>2</sup>	Analytical Method	Post Treatment Concentration (mg/kg)	Analytical Method	MRI Initial Concentration	MRI Analytical Results (mg/kg)	Analytical Method
1A	HA052901-01	5/29/2001	1530	6/1/2001	oil	10,200	HECO3	11,000	PCB/DCMA4	6,530	7,610	EPA 8082
1B	HA053001-01	5/30/2001	1030	6/1/2001	oil	13,300	HECO	11,500	PCB/DCMA	2,430	8,360	EPA 8082
1B DUP	HA053001-01D	5/30/2001	1030	6/1/2001	oil	13,300	HECO	15,000	PCB/DCMA	2,390	8,100	EPA 8082
2A	HA053001-02	5/30/2001	1345	6/1/2001	oil	17,000	HECO	15,000	PCB/DCMA	18,100	10,100	EPA 8082
2B	HA053001-03	5/30/2001	1640	6/1/2001	oil	20,000	HECO	25,300	PCB/DCMA	26,800	14,700	EPA 8082
2B DUP	HA053001-03D	5/30/2001	1640	6/1/2001	oil	20,000	HECO	25,300	PCB/DCMA	--	--	--
3A	HA060101-01	6/1/2001	1710	6/1/2001	oil	35,000	HECO	39,500	PCB/DCMA	43,700	21,300	EPA 8082
3B	HA060101-02	6/1/2001	800	6/1/2001	oil	40,000	HECO	29,100	PCB/DCMA	17,800	17,900	EPA 8082
3B DUP	HA060101-02D	6/1/2001	805	6/1/2001	oil	40,000	HECO	29,300	PCB/DCMA	--	--	--

Notes: 1. PCB – polychlorinated biphenyls

2. mg/kg - milligrams per kilograms

3. HECO - Hawaiian Electric Company analytical method approved by EPA September 1980 performed on untreated oil samples by HECO's analytical laboratory in Hawaii

4. PCB/DCMA - PCB analytical method using (DCMA) performed on treated oil samples by SD Myers in Tallmadge, Ohio

5. MRI - Environmental Protection Agency's contract laboratory analyzed sample split by EPA Method 8082.

Enclosure 1



**COPY**

October 30, 2001

Tetra Tech EM, Inc.  
Attn: Notifications  
135 Main Street  
San Francisco, CA 94105

Re: Provisional EPA ID Number for Terada at Hawaiian Electric Company's Ewa Nui Substation

Dear Sir/Madam:

Per my conversation with Tetra Tech's "Patrick" on October 30, 2001(415-495-8895), we are seeking a provisional (temporary) EPA ID number for our Ewa Nui Substation on behalf of a Japanese company (Terada) for whom we hosted a PCB-remediation test earlier this year. This test was conducted under a test permit issued by EPA's Office of Prevention, Pesticides and Toxic Substances (Washington, DC). A copy of the test permit is enclosed.

As the testing (and consequently the waste generated) was performed using equipment owned and operated by Terada, we wish to establish the provisional EPA ID number in Terada's name. Mr. Shigeo Seki, Vice President of Terada, has signed the enclosed 8700-12 form. His business card is enclosed.

As the Honolulu office of Terada is staffed on a part-time basis only, please feel free to contact me at (808) 543-4523 if you have any questions regarding the information submitted.

Sincerely,

Andrew Keith  
Senior Environmental Scientist

**WINNER OF THE EDISON AWARD**  
FOR DISTINGUISHED INDUSTRY LEADERSHIP



Please refer to Section V, Line-by-Line Instructions for Completing EPA Form 8700-12 before completing this form. The information requested here is required by law (Section 3010 of the Resource Conservation and Recovery Act).	<h2 style="margin:0;">Notification of Regulated Waste Activity</h2> <div style="display: flex; align-items: center; justify-content: center;"> <div> <p><b>United States Environmental Protection Agency</b></p> <p style="font-size: 1.2em; margin-top: 0;"><i>Provisional</i></p> </div> </div>	Date Received (For Official Use Only)
<b>I. Installation's EPA ID Number (Mark 'X' in the appropriate box)</b>		
<input checked="" type="checkbox"/> <b>A. Initial Notification</b> <input type="checkbox"/> <b>B. Subsequent Notification (Complete item C)</b>		<b>C. Installation's EPA ID Number</b> <div style="border: 1px solid black; height: 20px; width: 100%;"></div>
<b>II. Name of Installation (Include company and specific site name)</b> Teraida-Ewa Nui Substation		
<b>III. Location of Installation (Physical address not P.O. Box or Route Number)</b>		
Street 91-1440 Farrington Highway		
Street (Continued)		
City or Town Kapolei		State HI
Zip Code 96822-		
County Code 1	County Name Honolulu	
<b>IV. Installation Mailing Address (See instructions)</b>		
Street or P.O. Box 1441 Kapiolani Boulevard #1203		
City or Town Honolulu		State HI
Zip Code 96814-		
<b>V. Installation Contact (Person to be contacted regarding waste activities at site)</b>		
Name (Last) Seki		(First) Shigeo
Job Title Vice President		Phone Number (Area Code and Number) 808-946-1258
<b>VI. Installation Contact Address (See instructions)</b>		
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <b>A. Contact Address</b>            Location      Mailing  <input type="checkbox"/>            <input checked="" type="checkbox"/> </div> <div style="width: 50%;"> <b>B. Street or P.O. Box</b>  <div style="border: 1px solid black; height: 20px; width: 100%;"></div> </div> </div>		
City or Town		State      Zip Code
<b>VII. Ownership (See instructions)</b>		
<b>A. Name of Installation's Legal Owner</b> Hawaiiiah Electric Company		
Street, P.O. Box, or Route Number P.O. Box 2750 MS HPO-JW		
City or Town Honolulu		State      Zip Code HI 96840-0001
Phone Number (Area Code and Number) 808-543-4523	<b>B. Land Type</b> P	<b>C. Owner Type</b> P
<b>D. Change of Owner Indicator</b> Yes <input type="checkbox"/> No <input type="checkbox"/>		
<b>Date Changed</b> Month      Day      Year		

ID - For Official Use Only

## VIII. Type of Regulated Waste Activity (Mark 'X' in the appropriate boxes. Refer to Instructions)

## A. Hazardous Waste Activities

1. Generator (See Instructions)  
☒ a. Greater than 1000kg/mo (2,200 lbs.)  
☐ b. 100 to 1000 kg/mo (220-2,200 lbs.)  
☐ c. Less than 100 kg/mo (220 lbs.)
2. Transporter (Indicate Mode in boxes 1-5 below)  
☐ a. For own waste only  
☐ b. For commercial purposes
- Mode of Transportation  
☐ 1. Air  
☐ 2. Rail  
☐ 3. Highway  
☐ 4. Water  
☐ 5. Other - specify \_\_\_\_\_
- ☐ 3. Treater, Storer, Disposer (at Installation) Note: A permit is required for this activity, see instructions.
4. Exempt Boiler and/or Industrial Furnace  
☐ a. Smelting, Melting, and Refining Furnace Exemption  
☐ b. Small Quantity On-Site Burner Exemption
- ☐ 5. Underground Injection Control

## C. Used Oil Management Activities

1. Used Oil Transporter/Transfer Facility - Indicate Type(s) of Activity(ies)  
☐ a. Transporter  
☐ b. Transfer Facility
2. Used Oil Processor/Re-refiner - Indicate Type(s) of Activity(ies)  
☐ a. Processor  
☐ b. Re-refiner
- ☐ 3. Off-Specification Used Oil Burner
4. Used Oil Fuel Marketer  
☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Used Oil Burner  
☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

## B. Universal Waste Activity

- ☐ Large Quantity Handler of Universal Waste

## IX. Description of Hazardous Wastes (Use additional sheets if necessary)

## A. Listed Hazardous Wastes. (See 40 CFR 261.31 - 33; See instructions if you need to list more than 12 waste codes.)

1	2	3	4	5	6
7	8	9	10	11	12

## B. Characteristics of Nonlisted Hazardous Wastes. (Mark 'X' in the boxes corresponding to the characteristics of nonlisted hazardous wastes your installation handles; See 40 CFR Parts 261.20 - 261.24; See instructions if you need to list more than 4 toxicity characteristic waste codes.)

(List specific EPA hazardous waste number(s) for the Toxicity Characteristic contaminant(s))

1. Ignitable (D001)	2. Corrosive (D002)	3. Reactive (D003)	4. Toxicity Characteristic	1	2	3	4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

## C. Other Wastes. (State-regulated or other wastes requiring a handler to have an I.D. number; See Instructions.)

1	2	3	4	5	6

## X. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature

Name and Official Title (Type or print)

Date Signed

## XI. Comments

Please see attached documents

Note: Mail completed form to the appropriate EPA Regional or State Office. (See Section IV of the booklet for addresses.)

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## IX. Description of Hazardous Wastes (Continued; Additional Sheet)

## A. Listed Hazardous Wastes. (See 40 CFR 261.31 - 33; Use this page only if you need to list more than 12 waste codes.)

13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
79	80	81	82	83	84
85	86	87	88	89	90
91	92	93	94	95	96

## B. Toxicity Characteristic Hazardous Wastes. (See 40 CFR 261.24; Use this page only if you need to list more than 4 waste codes.)

5	6	7	8	9	10
11	12	13	14	15	16
17	18	19	20	21	22





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

AUG 17 2000

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Ms. Maya Rohr, Senior Project Manager  
Kleinfelder, Inc.  
5015 Shoreham Place  
San Diego, California 92122

Mr. Donn Fukuda  
Hawaiian Electric Company  
Environmental Department  
P.O. Box 2750  
Honolulu, HI 96840

Dear Ms. Rohr and Mr. Fukuda:

The National Program Chemicals Division (NPCD) of the Office of Pollution Prevention and Toxics (OPPT) of the U.S. Environmental Protection Agency (EPA) grants a joint approval to perform PCB Disposal Research and Development (R&D), to Terada Environmental Laboratory, LTD. (Terada) and to the Hawaiian Electric Company (HECO). Terada is the owner and operator of the Terada mobile PCB dechlorination technology and HECO is the owner of the site of the R&D study operations. This R&D approval applies only to the mobile three kiloliter capacity batch process unit. Enclosed is the approval document for the R&D studies entitled "Approval to Conduct Research and Development Tests to Dispose of Polychlorinated Biphenyls (PCBs), Removal of PCBs at the Hawaiian Electric Company, Honolulu, Hawaii." NPCD approves the disposal of three kiloliters of PCB liquid material for each treatability study and thirty (30) kiloliters of PCB liquid material total under this approval. Effective dates are from August 18, 2000 through November 18, 2000.

NPCD completed its review of the document entitled "PCB Treatment Technology Report" received by EPA on July 22, 1999 and letter dated August 4, 2000 in consideration of the issuance of a PCB R&D Approval pursuant to 40 CFR 761.60(e) (Alternate Method) and the Toxic Substance Control Act (TSCA) to destroy PCBs in liquid materials using the Terada mobile PCB dechlorination technology.



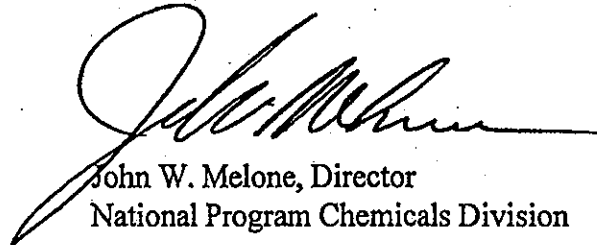
Recycled/Recyclable  
Printed with Soy/Canola Ink on paper that

Terada uses a proprietary reagent to treat PCB liquid material in a mixing reaction vessel. The reactor is enclosed and exhausted through a carbon adsorption system to capture volatile compounds. The process unit will treat three-liter batches of PCB contaminated liquid.

Terada intends to use liquid PCBs currently owned and stored for disposal by HECO to demonstrate the Terada PCB dechlorination technology to obtain a TSCA nationwide PCB Disposal Approval. To maintain availability of this PCB for the Terada demonstration, EPA extends the disposal deadline to December 31, 2001; or until the completion of the demonstration tests for the PCB Disposal Approval, whichever occurs first. HECO must initiate disposal procedures within 30 days after the completion of Terada's demonstration tests.

On completion of the studies, Terada and HECO must dispose of all materials resulting from these tests in EPA-approved facilities by the disposal deadline of December 31, 2001 or upon completion of a formal PCB disposal demonstration for EPA confirmation of PCB destruction effectiveness, whichever occurs first. Please direct matters concerning this subject to Hiroshi Dodochara of my staff on (202) 260-3959.

Sincerely,



John W. Melone, Director  
National Program Chemicals Division

Enclosure

cc: Max Weintraub  
USEPA Region IX

Yosh Tokiwa  
USEPA Region IX

Enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
APPROVAL TO CONDUCT RESEARCH AND DEVELOPMENT TESTS  
TO DISPOSE OF POLYCHLORINATED BIPHENYLS (PCBS)  
REMOVAL OF PCBs FROM LIQUID PCB MATERIAL  
THREE KILOLITERS PCB DECHLORINATION TECHNOLOGY  
LIMITED TO OPERATIONS AT THE HAWAIIAN ELECTRIC COMPANY FACILITY  
HONOLULU, HAWAII

TERADA ENVIRONMENTAL LABORATORY, LTD.  
T901-1111 OHYAMA BLD.  
292-2 AZA KANEGUSUSKU  
HAEBARU-TOWN, SIMAJIRI GUN  
OKINAWA, JAPAN

HAWAIIAN ELECTRIC COMPANY  
HONOLULU, HAWAII

This approval is issued to Terada Environmental Laboratory, LTD. (Terada) of Okinawa, Japan to conduct research and development (R&D) tests on Terada's alternate method of PCB disposal. The purpose of this R&D activity is to remove PCBs in liquid material using a proprietary reagent, to levels less than 2 ppm PCBs. Other media containing PCBs may be treated by Terada only through EPA approval of a proposed major modification to this approval. The R&D studies are being conducted to remove PCBs from liquids contained in electrical and other equipment to verify the proficiency of the PCB disposal process.

Authority

This approval to conduct R&D into PCB disposal is issued pursuant to Section 6(e)(1) of the Toxic Substances Control Act of 1976 (TSCA), Public Law No. 94-469, and the Federal PCB Regulations, 40 CFR Part 761.60(e), (48 Federal Register, 13185, March 30, 1983).

Effective Dates

This R&D approval is effective from August 18, 2000 through November 18, 2000.

### Proposed Test

Terada Environmental Laboratory, LTD. proposes to perform research and development to destroy PCBs in liquid PCB material. They will use the Terada chemical dechlorination process to destroy PCBs in liquid material. Terada plans to perform ten tests on soils ranging from as received, 534 ppm PCBs, to capacitor oil which may contain 100% PCBs. Terada intends to blend the high PCB-containing liquids using recycled material. Terada plans to vary ratios of reagent and liquid material to optimize operating conditions. Each test will last for about four hours.

At the conclusion of each test, the reactor contents will be placed in a clean container and stored for disposal. The company will collect samples of feed, product and side streams, before and after treatment, to transport to a third party laboratory for analysis.

On completion of the studies, Terada must dispose of the all materials resulting from the tests in EPA-approved facilities or stored for EPA confirmation of PCB content.

### Definitions:

1. "Project" means all work performed by Terada under a specific contract for a treatability study.
2. "Run" means a single experiment.
3. "Study" or "treatability study" refers to work performed on a sample or a group of samples submitted for a specific remediation site or for a specific objective.
4. "A test" refers to all work performed on a single sample.

### Conditions of Approval:

1. Advance Notification: A thirty-day advance notification of the tests must be provided to the appropriate EPA Regional Administrator and the State and local officials where the Terada PCB removal process will be tested. This notice must include the exact site and date using the treatment process along with an estimate of the length of study at the site. A copy of the notice shall be submitted to EPA Headquarters.
2. Other Permits and Approvals: No operation may commence until Terada has obtained all necessary approvals and/or permits from other Federal, State and local agencies. Terada is responsible for obtaining such approvals/permits where appropriate.
3. Feedstock Restrictions: The quantity of PCB liquid material for this approval will be limited to 30 liters total, 3 liters for each treatability study, with a maximum PCB concentration of 5,000 ppm PCBs. Reagents for this R&D approval will be restricted to that outlined in the July 1999

"PCB Treatment Technology Report." Prior to treatment in the Terada process, PCB feed must be sampled and analyzed according to EPA-approved procedures that are outlined in the following documents:

"Guidelines for PCB Destruction Permit Applications and Demonstration Test Plans",  
EPA Contract No. 68-02-3938,  
April 16, 1985;

"Quality Assurance and Quality Control Procedures for Demonstrating PCB Destruction in Filing for an EPA Disposal Permit;" USEPA, June 28, 1983 (Draft);

"Recommended Analytical Requirements for PCB Data Generated on-Site During Non-thermal PCB Destruction Tests"  
March 19, 1986; and

"Interim Guidelines and Specifications for Preparing Quality Assurance Plans", QAMS-005/80, Office of Research and Development, USEPA, December 29, 1980.

4. Process Restrictions. Terada shall establish a secondary containment system (berm or equivalent) in the processing area for management of liquid waste to ensure inadvertent releases of PCBs and PCB-related hazardous waste into the environment do not occur. Terada shall sample and analyze for PCBs all fluids accumulating in the process area containment system. The fluid must meet all other applicable Federal, State or local regulatory requirements specific for the project, prior to discharge.

5. Process Waste Restrictions: Terada shall analyze for PCBs, all wastes generated during the course of operations, including the following: filter media, carbon adsorption media, and sediment from reactor and treated material tanks. On completion of the studies, Terada and HECO must dispose of all materials resulting from these tests in EPA-approved facilities by the disposal deadline of December 31, 2001 or upon completion of a formal PCB disposal demonstration for EPA confirmation of PCB destruction effectiveness, whichever occurs first. EPA-approved analytical methods for PCBs in different phases (water, solids and oil) must be used by Terada in making such determinations.

If waste feedstock is reinforced/spiked by liquid material required by regulation to be incinerated, all process wastes must be managed in one of three ways: (1) incinerated, (2) disposed of by treatment equivalent to incineration, or (3) non-liquids may be disposed of in an EPA-approved TSCA landfill.

6. Storage of PCBs: Terada intends to use liquid PCBs currently owned and stored for disposal by HECO to demonstrate the Terada PCB dechlorination technology to obtain a TSCA nationwide PCB Disposal Approval. The PCB liquids currently on site include the following material: One 55 gallon drum (#27367) of transformer oil containing 534 ppm PCBs and two gallons of capacitor oil (Drum #57). EPA grants an extension, for these PCBs only, on the one-

year storage for disposal deadline to December 31, 2001; or until the completion of the demonstration tests for the PCB Disposal Approval, whichever occurs first. HECO must initiate disposal procedures within 30 days after the completion of Terada's demonstration tests. HECO and Terada may store PCBs and PCB Items at concentrations of 50 ppm or greater subject to the following conditions:

- a. Storage in a Facility Complying with 40 CFR 761.65(b)(1): Pursuant to this approval, HECO and Terada may
  - (1) store, at any one time, PCBs and PCB Items in quantities up to 70 cubic feet for non-liquid material, 500 liquid gallons, or combined liquid and non-liquid PCBs up to ten 55-gallon drums and is not subject to the PCB Commercial Storage approval requirements at 40 CFR 761.65(d), or
  - (2) store PCBs and PCB Items in quantities greater than 70 cubic feet for non-liquid material, 500 liquid gallons, or combined liquid or non-liquid PCBs up to ten 55-gallon drums and is subject to the PCB Commercial Storage approval requirements at 40 CFR 761.65(d). These requirements include, in part, the submission of: a closure plan, a closure cost estimate, and financial assurance for closure.
- b. Storage in Facilities which Comply with 40 CFR 761.65(b)(2): Pursuant to this demonstration approval, HECO and Terada may store PCB and PCB Items in a facility which is:
  - (1) permitted under EPA under Section 3004 RCRA or has achieved interim status under Section 3005 of RCRA,
  - (2) permitted by a State authorized under Section 3006 of RCRA,
  - (3) approved or regulated under a State PCB waste management program no less stringent than the requirements at found in this Part,
  - (4) subject to a TSCA Coordinated Approval pursuant to 40 CFR 761.77 which includes provisions for PCB storage, or
  - (5) permitted under a TSCA waste management approval pursuant to 40 CFR 761.61© and 761.61(c).
- c. Storage in an Area which Does not Comply with 40 CFR 761.65(b): Pursuant to this approval, HECO and Terada may temporarily store for not more than thirty days the following PCB Items in a facility which does comply with provisions under 40 CFR 761.65(b) provided that a notation is attached to the PCB Item or a PCB Container continuing the PCB Item indicating the date the item was removed from service or generated as a waste,

- (1) Non-Leaking PCB Articles and PCB Equipment,
- (2) Leaking PCB Articles and PCB Equipment provided the items are placed in a non-leaking PCB container that contains sufficient sorbent material to absorb remaining liquid PCBs in the item,
- (3) PCB Containers containing non-liquid PCBs such as contaminated soil, rags and debris,
- (4) PCB containing liquids PCBs at concentrations of  $\geq 50$  ppm, provided a Spill Prevention, Control and Countermeasure Plan has been prepared for the temporary storage area in accordance with part 112 of this chapter and the liquid PCB waste is in Packaging authorized in the DOT Hazardous Material Regulations at 40 CFR Parts 171 through 180 or stationary bulk storage tanks (including rolling stock such as, but not limited to, tanker trucks, as specified by DOT.

- d. Any PCB material not disposed of or meeting the destruction efficiency criteria under this approval shall be disposed of at EPA approved facilities. As an alternative, HECO and Terada may elect to dispose of any remaining PCB liquid following disposal procedures outlined in the pending PCB Disposal Demonstration Approval under the Interim Operations paragraph.

7. Transport of PCBs: Untreated PCB-containing water, solvent or solids may not be transported off-site by the Terada treatment unit except for proper disposal. PCB-contaminated equipment on the Terada PCB disposal units may be transported off-site in accordance with the U.S. Department of Transportation (DOT) requirements of Title 49, CFR Part 172. Such requirements include placarding the mobile facility and labeling all PCBs.

8. Process Malfunction: If the quality control testing as described in the R&D request reveals that the PCBs have not been adequately removed from the soil and/or water after repeated processing (not to exceed three times the theoretical process time or passes necessary for complete removal), disposal activities may be ordered to cease until an adequate explanation is given and corrective measures are taken. A written report detailing the problem and solution shall be filed with the EPA Region IX Office and the National Program Chemicals Division, Office of Pollution Prevention and Toxics, U.S. EPA, Washington, D.C. within five business days.

9. Process Monitoring/Recording: Provisions must be made to assure that the following process elements are suitably monitored and recorded for each batch processed, such that materials harmful to health or the environment are not inadvertently released:

- a. quantity and concentration of PCBs and other raw materials processed during the disposal of PCB in contaminated material;

- b. quantity and quality of treated fluid produced and treated;
- c. quantity and quality of process waste generated (i.e., sludge, filter media, water, spent solvent or other effluents), including vent gases or other emissions;
- d. PCB exposure in the working area;
- e. temperature and pressure of the chemical dechlorination process at minimum in one-half hour intervals;
- f. name of operator and supervisor.

This information and all pertinent test data shall be incorporated into a test report and submitted to EPA Headquarters no later than 60 days after the completion date of the testing.



#### 10. R&D Test Report

All test results and related information on this R&D project shall be incorporated into a test report and submitted to NPCD for evaluation. The R&D Test Report shall include, at a minimum, the following items:

A. Certification letter. This letter, signed by an authorized official, must certify on behalf of the applicant that the tests were carried out in accordance with the approved application and the results of all determinations are submitted in the report. Any changes or deviations by the applicant from the application must be documented and submitted in writing to the Environmental Protection Agency (EPA).

B. Detailed discussion of all process operations, operational problems, if any, and corrective actions.

C. Chronology of significant events.

D. Quality assurance (QA) report. This shall address all the QA objectives, including whether or not precision and accuracy objectives were met, as well as results of quality control samples, performance audit samples and systems audits.

E. Waste handling. Applicant shall provide documentation (copies of manifest and certificates of destruction) to show all wastes generated during the R&D process test were properly disposed according to TSCA and Resource Conservation and Recovery Act (RCRA) regulations.

EPA will not make a decision to issue another approval on the Terada process based on changes resulting from this R&D until no less than 30 days following the receipt of this R&D Test Report.

11. PCB Releases: In the event Terada or an authorized facility operator of the Terada PCB dechlorination process believes, or has reason to believe that a release has or might have occurred, the facility operator must inform the Fibers and Organic Branch Chief (202-260-3933) and the EPA Region IX PCB Coordinator immediately.

A written report describing the incident must be submitted by the close of business on the next regular business day. No PCBs may be processed in that facility until the release problem has been corrected to the satisfaction of EPA Region.

12. Facility Inspection: EPA employees shall have access to the Terada process during the test runs for purposes of inspection, observation, or sampling. This access is subject to the normal safety requirements placed on Terada personnel or their agents.

13. Safety and Health: Terada or its agents must take all necessary precautionary measures to ensure that operation of the Terada process is in compliance with the applicable safety and health standards, as required by Federal, State and local regulations and ordinances. Any lost-time personal injury occurring as result of the Terada process must be reported to the EPA Region IX PCB Coordinator by the next regular business day.

14. Facility Security: The Terada process shall be secured (e.g., fence, alarm system, etc.) at the test site to restrict public access to the area.

15. PCB Spills: Any spills of PCBs or other fluids shall be promptly controlled and cleaned up as provided in the Terada Spill Prevention Plan. In addition, a written report describing the spill, operations involved, and cleanup actions must be submitted to EPA Region IX within five (5) business days.

16. Personnel Training: Terada is responsible for ensuring that personnel directly involved with the handling or disposal of PCB-contaminated material using the Terada process, are demonstrably familiar with the general requirements of this R&D approval. At a minimum this must include:

- a. the type of material which may be treated during the testing of the Terada process and the upper limit of the PCB contamination which may be treated;
- b. basic reporting and recordkeeping requirements under this R&D approval and the location of records at the test site;
- c. notification requirements; and
- d. waste disposal requirements for process and by-product wastes generated during the testing of the Terada PCB disposal process.

In this regard, Terada must maintain on-site during the testing of its soil treatment process a copy of this R&D approval; the Spill Prevention Control and Cleanup Plan; and sampling and analytical procedures used to determine PCB concentrations in untreated and treated materials.

17. PCB Regulations Compliance: Terada shall comply with all applicable requirements of the Federal PCB Regulations, 40 CFR Part 761, in the operation of the Terada process; particular note should be given to:

- a. 40 CFR, section 761.65 - storage for disposal;
- b. 40 CFR, section 761.79 - decontamination; and
- c. 40 CFR, section 761.180 - records and monitoring.

18. Permit Variance: Any departure from the conditions of this research and development approval or the terms expressed in the application, demonstration plan, and R&D plan from

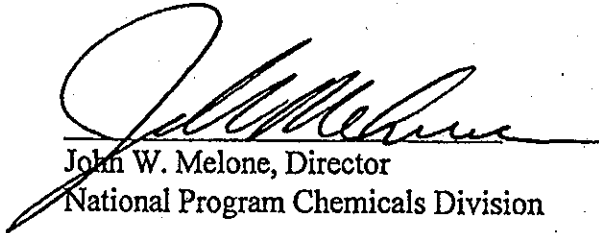
Terada must receive authorization from EPA. Verbal authorizations by EPA must be followed within ten working days by a written notification from Terada describing all modifications. In this context, "application, demonstration plan, and R&D plan" shall be defined as all data and materials which have been received by this Agency from the Terada regarding the Terada PCB disposal method.

Under the above conditions, and given the circumstances under which the research and development tests will be conducted, the National Program Chemicals Division finds, pursuant to 40 CFR 761.60(e), that these tests will not present an unreasonable risk of injury to health or the environment.

Approval:

Approval to conduct research and development into PCB disposal is hereby granted to Terada Environmental Laboratory, LTD of Okinawa, Japan subject to the conditions expressed herein, and consistent with the materials and data included in Terada's submission. This R&D approval is valid when conducted at the Hawaii Electric Company facility in Honolulu, Hawaii.

8/17/00  
Date

  
John W. Melone, Director

National Program Chemicals Division

## APPENDIX

### BACKGROUND

Section 6(e)(1)(A) of the Toxic Substances Control Act (TSCA) requires that EPA promulgate rules for the disposal of polychlorinated biphenyls (PCBs). The rules implementing section 6(e)(1)(A) were published in the Federal Register of May 31, 1979 (44 FR 31514) and recodified in the Federal Register of May 6, 1982 (47 FR 19527). Those rules require, among other things, that various types of PCBs and PCB Articles be disposed of in EPA-approved landfills (40 CFR 761.75), incinerators (40 CFR 761.70), high efficiency boilers (40 CFR 761.60), or by alternative methods (40 CFR 761.60(e)) that demonstrate a level of performance equivalent to EPA-approved incinerators or high efficiency boilers. The May 31, 1979 Federal Register also designated Regional Administrators as the approval authority for PCB disposal facilities.

On March 30, 1983, EPA issued a procedural rule amendment to the PCB rule (48 FR 13185). This procedural rule change transferred the review and approval authority of mobile and other PCB disposal facilities that are used in more than one region to the Office of Prevention Pesticides and Toxics Substances (OPPTS). The purpose of the amendment is to eliminate duplication of effort in the regional offices and to unify the Agency's approach to PCB disposal. The amendment gives the Assistant Administrator authority to issue nationwide approvals (i.e., approvals which will be effective in all ten EPA regions) to mobile and other PCB disposal facilities that are used in more than one region.

Terada submitted a PCB Application July 22, 1999. Request for an R&D application was submitted August 4, 2000 based on the July 1999 submission. The application for a research and development approval to dispose of PCBs pertaining to an alternate disposal method to destroy PCBs in liquid material using a reagent. The Terada unit is a transportable reactor unit capable of treating three liters of material per batch. A description of the unit is on file in EPA Headquarters.

### Business Confidentiality

Pursuant to the regulations at 40 CFR Part 2, Subpart B (41 Federal Register, 36905, September 1, 1976, and 43 Federal Register, 39997, September 8, 1978), Terada or its authorized agent is entitled to assert a business confidentiality claim covering any information you submit under this R&D approval. If such a confidentiality claim is not asserted with any submission, EPA may make this information available to the public without further notice to you. Information subject to a business confidentiality claim may be made available to the public only to the extent set forth in the above cited regulations. Any such claim for confidentiality must conform to the requirements set forth in 40 CFR §2.203(b).

Liability

The issuance of this R&D approval does not release Terada or their authorized agent from any liability for damage to persons or property caused by or resulting from the operation or maintenance of equipment covered by this approval. The conditions of this approval are enforceable under the Toxic Substances Control Act (the Act) and its implementing regulations, 40 CFR Part 761. Any actions by Terada or its authorized agent which violate the terms and conditions of this letter, the Act, or the regulations issued thereunder, may result in administrative, civil, or criminal enforcement by EPA in accordance with Section 16 of the Act, 15 U.S.C. §2615.

FINDINGS:

1. The Terada process is a batch process to treat PCB liquid with a reagent. The reagent and PCBs in oil are pumped into the reactor and maintained at a temperature of approximately 40°C. Terada claims that the reaction is complete in 30 min to 40 min.
2. The Terada Process consists of a reactor tank, feed holding tank, liquid pumps, carbon filter and blower.
3. The Terada process does not emit harmful materials into the air, water, soils, or other surfaces. Liquid and solid wastes will be disposed of by incineration or chemical waste landfill at an EPA-approved disposal site or stored for EPA confirmation.
4. Terada has submitted data which indicate that their Terada process has capability to remove PCBs from PCB liquid material to meet standards set by an EPA-approved incinerator or high efficiency boiler. Furthermore, the Terada unit precludes emissions or discharges to the atmosphere. Terada equipment will be decontaminated, if applicable, filter media will be removed, then packaged in Department of Transportation (DOT) and EPA acceptable containers to store and to transport for disposal. Therefore, EPA finds that an approval for research and development operations of the Terada PCB disposal method is equivalent to operations conducted on a 40 CFR Part 761.70 incinerator or 40 CFR Part 761.60 high efficiency boiler and that the operations of the Terada PCB disposal unit does not pose an unreasonable risk of injury to human health or the environment.

Enclosure 2

UNIFORM HAZARDOUS  
WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No.

2. Page 1

Information in the shaded areas  
is not required by Federal law.

H I P 0 0 0 1 0 8 4 0 7 2 1 2 0 7

of 2

3. Generator's Name and Mailing Address

TERADA-EWA NUI SUBSTATION  
91-1440 FARRINGTON HIGHWAY  
KAPOLEI, HI 96822

4. Generator's Phone (808) 946-1258

5. Transporter 1 Company Name

HAZTECH ENVIRONMENTAL SERVICES

6. US EPA ID Number

H I R 0 0 0 0 5 0 3 3 6

7. Transporter 2 Company Name

RHS LEE, INC

8. US EPA ID Number

H I D 0 0 0 0 7 6 8 5 1

9. Designated Facility Name and Site Address

CHEMICAL WASTE MANAGEMENT  
35251 OLD SKYLINE RD.  
KETTLEMAN HILLS, CA 98239

10. US EPA ID Number

C A T 0 0 0 6 4 6 1 1 7

A. State Manifest Document Number

21462985

B. State Generator's ID

C. State Transporter's ID (Reserved)

D. Transporter's Phone

(808) 671-1985

E. State Transporter's ID (Reserved)

F. Transporter's Phone

(808) 455-9026

G. State Facility's ID

C A T 0 0 0 6 4 6 1 1 7

H. Facility's Phone

(559) 386-9711

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)

12. Containers  
No. Type

13. Total  
Quantity

14. Unit  
Wt/Vol

I. Waste Number

a. NON-RCRA HAZARDOUS WASTE SOLID (POLY TANKS  
CONTAMINATED WITH SODIUM HYDROXIDE)

002 C M

92000

P

State 181,261

EPA/Other

State

EPA/Other

State

EPA/Other

State

EPA/Other

J. Additional Descriptions for Materials Listed Above

PROFILE #EB5305

K. Handling Codes for Wastes Listed Above

a.

b.

c.

d.

15. Special Handling Instructions and Additional Information

24 HOUR EMERGENCY NUMBER: (800) 424-9300 WMI CONTRACT  
CERTIFICATE OF DISPOSAL REQUIRED/CONTAINER #  
HAZTECH JOB # 01-383

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name

SHIGEO SEKI

Signature

Month Day Year  
12/10/01

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

JOHN F. RAMSEY

Signature

Month Day Year  
12/15/01

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature

Month Day Year

DO NOT WRITE BELOW THIS LINE.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Mr. Tadamitsu Umeno  
Member of City Assembly  
Prism Tower 1203  
390-3 Hondosu-machi  
Tosu-shi  
Saga-ken, Japan, 841-0026

AUG 22 2006

Dear Mr. Umeno:

This is in response to your inquiry to Mr. Max Weintraub, Regional PCB Coordinator for the U.S. Environmental Protection Agency (EPA) Region 9 regarding "US EPA ID NUMBER HIP 000108407" dated June 27, 2006 concerning the Terada Environmental Laboratory (Terada) PCB Disposal Approval (permit) procedure. As Mr. Shunichi Terada informed you, Terada demonstrated the Terada PCB disposal technology during the period from May 28<sup>th</sup> to June 1<sup>st</sup>, 2001, in an attempt to obtain a PCB Disposal Approval from EPA. For the reasons described below, EPA did not issue an Approval or any official certificate or letter certifying the efficacy of the Terada PCB process. An Approval would authorize the Permittee to operate their process equipment under the Toxic Substance Control Act (TSCA). Terada performed three tests in the presence of my staff who collected split samples of the transformer waste oil and the treated transformer waste oil. The table in Appendix A presents the results of the tests which are a summary of the data in the sampling log provided in Appendix B.

Results of the Terada tests indicate little reduction in the concentration of PCBs in the transformer oil. In some instances, the PCB concentration increased after treatment. One possible explanation for this phenomenon may be by the chemical reaction of the alkali reagent with the oil, termed saponification, similar to the production of soap. Only a portion of the transformer oil would be saponified and then emulsified or "dissolved" in the reagent. Because the reagent does not saponify PCBs, the PCBs remain in the transformer oil raising the PCB concentration in the remaining transformer oil.

To be eligible for an EPA PCB Disposal Approval under TSCA, a chemical dechlorination technology such as the Terada process must destroy PCBs as well as an incinerator or must be equivalent to an incinerator. The Applicant, Terada, must demonstrate that the process meets the EPA criteria of 2 ppm PCB in the treated material. The Terada process did not achieve this level and consequently does not qualify for a PCB Disposal Approval.

CONCURRENCES							
SYMBOL	▶ 7404T	7404T	7404T				
SURNAME	▶ Doduara	TMGunt	1206				
DATE	▶ 8/22/06	8/22/06	8/22/06				

To clarify the issuance of the EPA ID number HIP 000108407, the EPA Region 9 office under the Resource Conservation and Recovery Act (RCRA) issued this provisional number, which is valid for 90 days, jointly to Terada and the Ewa Nui Substation, owned by the Hawaiian Electric Company, Inc. (HECO). Upon completion of the PCB Disposal Demonstration at the Ewa Nui Substation, Terada was responsible for the disposal of all waste generated during the demonstration tests, including hazardous waste. To transport and to dispose of hazardous waste, the generator of the hazardous waste must possess an EPA ID number. Thus, HECO requested the Region 9 office (Tetra Tech EM, Inc. is the EPA contractor) for a provisional or temporary EPA ID number on behalf of Terada. The request named Mr. Shigeo Seki, Vice President, as the Terada representative (see Enclosure 1). The Uniform Hazardous Waste Manifest presented in Enclosure 2 clearly identifies the owner of the EPA ID number HIP 000180407 to be Terada, signed by Mr. Seki, and transporting sodium hydroxide contaminated hazardous waste to Chemical Waste Management located in Kettleman Hills, California, USA. Manifests are legal forms used to record the shipment of hazardous waste from one location to another. Lastly, this provisional ID number was issued on November 1, 2001 and because provisional numbers are valid for 90 days, the EPA ID number HIP 000108407 is no longer valid.

Please contact Hiroshi A. Dodohara of my staff at (202) 566-0507 if you have any questions pertaining to this correspondence.

Sincerely,

Maria J. Doa, Ph.D.  
Director  
National Program Chemicals Division

Enclosure

cc: Max Weintraub, PCB Coordinator  
EPA Region 9

Andrew Keith  
Hawaiian Electric Company, Inc



Appendix A  
 Test Results from the Terada Environmental Laboratory  
 PCB Disposal Demonstration at the  
 Hawaii Electric Company  
 Ewa Nui Substation  
 May 28 -- June 1, 2001

<u>RUN NO.</u>	<u>Initial PCB Concentration</u> <u>Untreated Oil, ppm</u>		<u>Final PCB Concentration</u> <u>Treated Oil, ppm</u>	
	<u>Terada<sup>1</sup></u>	<u>EPA</u>	<u>Terada<sup>2</sup></u>	<u>EPA</u>
1A	10,200	6,530	11,000	7,610
1B	13,300	2,430	11,500	8,360
1B Dup	13,300	2,390	15,000	8,100
2A	17,000	18,100	15,500	10,100
2B	20,000	26,800	25,300	10,100
2B Dup	20,000	-	25,300	-
3A	35,000	43,700	39,500	21,300
3B	40,000	17,800	29,100	17,900
3B Dup	40,000	-	29,300	-

<sup>1</sup> Analysis by Hawaii Electric Company on behalf of Terada

<sup>2</sup> Analysis by S.D. Myers, Terada contractor

Dup means duplicate analysis

Appendix A  
 Test Results from the Terada Environmental Laboratory  
 PCB Disposal Demonstration at the  
 Hawaii Electric Company  
 Ewa Nui Substation  
 May 28 – June 1, 2001

RUN NO.	Initial PCB Concentration Untreated Oil, ppm		Final PCB Concentration Treated Oil, ppm	
	Terada <sup>1</sup>	EPA	Terada <sup>2</sup>	EPA
1A	10,200	6,530	11,000	7,610
1B	13,300	2,430	11,500	8,360
1B Dup	13,300	2,390	15,000	8,100
2A	17,000	18,100	15,500	10,100
2B	20,000	26,800	25,300	10,100
2B Dup	20,000	-	25,300	-
3A	35,000	43,700	39,500	21,300
3B	40,000	17,800	29,100	17,900
3B Dup	40,000	-	29,300	-

<sup>1</sup> Analysis by Hawaii Electric Company on behalf of Terada

<sup>2</sup> Analysis by S.D. Myers, Terada contractor

Dup means duplicate analysis

Appendix B  
Sampling Log from the TSCA Demonstration Tests

Test Run	Sample ID	Sample Date	Sample Time	Shipment Date	Sample Matrix	Initial PCB1 Concentration (mg/kg) <sup>2</sup>	Analytical Method	Post Treatment Concentration (mg/kg)	Analytical Method	MRI Initial Concentration	MRI Analytical Results (mg/kg)	Analytical Method
1A	HA052901-01	5/29/2001	1530	6/1/2001	oil	10,200	HECO3	11,000	PCB/DCMA4	6,530	7,610	EPA 8082
1B	HA053001-01	5/30/2001	1030	6/1/2001	oil	13,300	HECO	11,500	PCB/DCMA	2,430	8,360	EPA 8082
1B DUP	HA053001-01D	5/30/2001	1030	6/1/2001	oil	13,300	HECO	15,000	PCB/DCMA	2,390	8,100	EPA 8082
2A	HA053001-02	5/30/2001	1345	6/1/2001	oil	17,000	HECO	15,000	PCB/DCMA	18,100	10,100	EPA 8082
2B	HA053001-03	5/30/2001	1640	6/1/2001	oil	20,000	HECO	25,300	PCB/DCMA	26,800	14,700	EPA 8082
2B DUP	HA053001-03D	5/30/2001	1640	6/1/2001	oil	20,000	HECO	25,300	PCB/DCMA	--	--	--
3A	HA060101-01	6/1/2001	1710	6/1/2001	oil	35,000	HECO	39,500	PCB/DCMA	43,700	21,300	EPA 8082
3B	HA060101-02	6/1/2001	800	6/1/2001	oil	40,000	HECO	29,100	PCB/DCMA	17,800	17,900	EPA 8082
3B DUP	HA060101-02D	6/1/2001	805	6/1/2001	oil	40,000	HECO	29,300	PCB/DCMA	--	--	--

Notes: 1. PCB – polychlorinated biphenyls

2. mg/kg - milligrams per kilograms

3. HECO - Hawaiian Electric Company analytical method approved by EPA September 1980 performed on untreated oil samples by HECO's analytical laboratory in Hawaii

4. PCB/DCMA - PCB analytical method using (DCMA) performed on treated oil samples by SD Myers in Tallmadge, Ohio

5. MRI - Environmental Protection Agency's contract laboratory analyzed sample split by EPA Method 8082.

# ROUTING SLIP

#	NAME	ACTION	INITIAL	DATE
1	Hiroshi Dodohara	Originator	<i>He</i>	7/27/06
2	Sara McGurk	Concur	<i>Sm</i>	8/7/06
3	Shiela Canavan	Concur		
4	Maria Doa	Sign	<i>MD</i>	8/22/06
5	Pat Robinson	Log	<i>PR</i>	8/22/06
6				
7				
8				
9				

## Nature of Item Being Routed

Response to Mr. Umeno, a city council member inquiring on behalf of Mr. Terada whose company demonstrated a chemical dechlorination process unsuccessfully and now is trying to legitimize his process using an old EPA ID number.

FROM:

H. Dodohara

DATE

7/27/06

TELE #

566-0507

ROOM #

EPA East 4353QQ

'06 6/29/06 14:06

FAX 0942446043

P. 1

June 27<sup>th</sup>, 2006

Mr. Max Weintraub  
Regional PCB Coordinator

This is to inquire about "US EPA ID NUMBER HIP 000108407".

According to Mr. Shunichi Terada, his Environmental Laboratory carried out an experiment from May 28<sup>th</sup> to 30<sup>th</sup>, 2001, on decreasing the level of PCBs in 20ℓ of transformer waste oil (33,000ppm) that was kept at Hawaiian Electric Company, Hawaii. As a result, its effect was approved by EPA, and the ID number was issued. At the present time, he is waiting to receive the official certificate of technology's efficacy.

Now, I would like to ask 2 questions as follows:

- Was the ID number issued for the approval of his effect on decreasing the PCBs level as Mr. Terada says?
- Is the record of Terada Environmental Laboratory's experiment carried out in Hawaii, from May 28<sup>th</sup> to 30<sup>th</sup>, 2001, kept in EPA? If so, will you give me a brief summary of its contents?

I look forward to hearing from you soon.

Thank you in advance for any information you will give me.

Tadamitsu Ume  
Member of City  
Kurume, Japan  
FAX 81-942-84-  
E-mail: kurume

Provisional EPA ID No.

HIP 00018407

was issued Nov. 1, 2001.

Source: TetraTech, RCRA  
Notifications Reg. 9  
415-495-8895



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

Toxics Office (CED-4)

Communities and Ecosystems Division

FROM

Number of Pages: 2

NAME: Yoshiro Tokiwa DATE: 7-6-06

TELEPHONE NO: (415) 947-4172 FAX NO: (415) 947-3583

DEPARTMENT/OFFICER: \_\_\_\_\_

TO

NAME: H. Dodohara

TELEPHONE NO: 202/566-<sup>0507</sup>~~0473~~ FAX NO: 202/566-0473

DEPARTMENT/OFFICE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

SUBJECT: Terada Environmental PCB  
Oil Treatment Test

REMARKS: \_\_\_\_\_



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

AUG 22 2006

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Mr. Tadamitsu Umeno  
Member of City Assembly  
Prism Tower 1203  
390-3 Hondosu-machi  
Tosu-shi  
Saga-ken, Japan, 841-0026

Dear Mr. Umeno:

This is in response to your inquiry to Mr. Max Weintraub, Regional PCB Coordinator for the U.S. Environmental Protection Agency (EPA) Region 9 regarding "US EPA ID NUMBER HIP 000108407" dated June 27, 2006 concerning the Terada Environmental Laboratory (Terada) PCB Disposal Approval (permit) procedure. As Mr. Shunichi Terada informed you, Terada demonstrated the Terada PCB disposal technology during the period from May 28<sup>th</sup> to June 1<sup>st</sup>, 2001, in an attempt to obtain a PCB Disposal Approval from EPA. For the reasons described below, EPA did not issue an Approval or any official certificate or letter certifying the efficacy of the Terada PCB process. An Approval would authorize the Permittee to operate their process equipment under the Toxic Substance Control Act (TSCA). Terada performed three tests in the presence of my staff who collected split samples of the transformer waste oil and the treated transformer waste oil. The table in Appendix A presents the results of the tests which are a summary of the data in the sampling log provided in Appendix B.

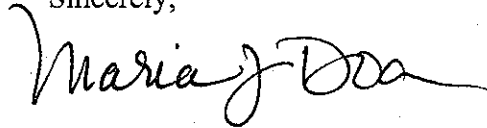
Results of the Terada tests indicate little reduction in the concentration of PCBs in the transformer oil. In some instances, the PCB concentration increased after treatment. One possible explanation for this phenomenon may be by the chemical reaction of the alkali reagent with the oil, termed saponification, similar to the production of soap. Only a portion of the transformer oil would be saponified and then emulsified or "dissolved" in the reagent. Because the reagent does not saponify PCBs, the PCBs remain in the transformer oil raising the PCB concentration in the remaining transformer oil.

To be eligible for an EPA PCB Disposal Approval under TSCA, a chemical dechlorination technology such as the Terada process must destroy PCBs as well as an incinerator or must be equivalent to an incinerator. The Applicant, Terada, must demonstrate that the process meets the EPA criteria of 2 ppm PCB in the treated material. The Terada process did not achieve this level and consequently does not qualify for a PCB Disposal Approval.

To clarify the issuance of the EPA ID number HIP 000108407, the EPA Region 9 office under the Resource Conservation and Recovery Act (RCRA) issued this provisional number, which is valid for 90 days, jointly to Terada and the Ewa Nui Substation, owned by the Hawaiian Electric Company, Inc. (HECO). Upon completion of the PCB Disposal Demonstration at the Ewa Nui Substation, Terada was responsible for the disposal of all waste generated during the demonstration tests, including hazardous waste. To transport and to dispose of hazardous waste, the generator of the hazardous waste must possess an EPA ID number. Thus, HECO requested the Region 9 office (Tetra Tech EM, Inc. is the EPA contractor) for a provisional or temporary EPA ID number on behalf of Terada. The request named Mr. Shigeo Seki, Vice President, as the Terada representative (see Enclosure 1). The Uniform Hazardous Waste Manifest presented in Enclosure 2 clearly identifies the owner of the EPA ID number HIP 000108407 to be Terada, signed by Mr. Seki, and transporting sodium hydroxide contaminated hazardous waste to Chemical Waste Management located in Kettleman Hills, California, USA. Manifests are legal forms used to record the shipment of hazardous waste from one location to another. Lastly, this provisional ID number was issued on November 1, 2001 and because provisional numbers are valid for 90 days, the EPA ID number HIP 000108407 is no longer valid.

Please contact Hiroshi A. Dodohara of my staff at (202) 566-0507 if you have any questions pertaining to this correspondence.

Sincerely,



Maria J. Doa, Ph.D.  
Director  
National Program Chemicals Division

Enclosure

cc: Max Weintraub, PCB Coordinator  
EPA Region 9

Andrew Keith  
Hawaiian Electric Company, Inc



Appendix A  
 Test Results from the Terada Environmental Laboratory  
 PCB Disposal Demonstration at the  
 Hawaii Electric Company  
 Ewa Nui Substation  
 May 28 – June 1, 2001

<u>RUN NO.</u>	<u>Initial PCB Concentration</u> <u>Untreated Oil, ppm</u>		<u>Final PCB Concentration</u> <u>Treated Oil, ppm</u>	
	<u>Terada<sup>1</sup></u>	<u>EPA</u>	<u>Terada<sup>2</sup></u>	<u>EPA</u>
1A	10,200	6,530	11,000	7,610
1B	13,300	2,430	11,500	8,360
1B Dup	13,300	2,390	15,000	8,100
2A	17,000	18,100	15,500	10,100
2B	20,000	26,800	25,300	10,100
2B Dup	20,000	-	25,300	-
3A	35,000	43,700	39,500	21,300
3B	40,000	17,800	29,100	17,900
3B Dup	40,000	-	29,300	-

<sup>1</sup> Analysis by Hawaii Electric Company on behalf of Terada

<sup>2</sup> Analysis by S.D. Myers, Terada contractor

Dup means duplicate analysis

Appendix B  
Sampling Log from the TSCA Demonstration Tests

Test Run	Sample ID	Sample Date	Sample Time	Shipment Date	Sample Matrix	Initial PCB1 Concentration (mg/kg) <sup>2</sup>	Analytical Method	Post Treatment Concentration (mg/kg)	Analytical Method	MRI Initial Concentration	MRI Analytical Results (mg/kg)	Analytical Method
1A	HA052901-01	5/29/2001	1530	6/1/2001	oil	10,200	HECO3	11,000	PCB/DCMA4	6,530	7,610	EPA 8082
1B	HA053001-01	5/30/2001	1030	6/1/2001	oil	13,300	HECO	11,500	PCB/DCMA	2,430	8,360	EPA 8082
1B DUP	HA053001-01D	5/30/2001	1030	6/1/2001	oil	13,300	HECO	15,000	PCB/DCMA	2,390	8,100	EPA 8082
2A	HA053001-02	5/30/2001	1345	6/1/2001	oil	17,000	HECO	15,000	PCB/DCMA	18,100	10,100	EPA 8082
2B	HA053001-03	5/30/2001	1640	6/1/2001	oil	20,000	HECO	25,300	PCB/DCMA	26,800	14,700	EPA 8082
2B DUP	HA053001-03D	5/30/2001	1640	6/1/2001	oil	20,000	HECO	25,300	PCB/DCMA	--	--	--
3A	HA060101-01	6/1/2001	1710	6/1/2001	oil	35,000	HECO	39,500	PCB/DCMA	43,700	21,300	EPA 8082
3B	HA060101-02	6/1/2001	800	6/1/2001	oil	40,000	HECO	29,100	PCB/DCMA	17,800	17,900	EPA 8082
3B DUP	HA060101-02D	6/1/2001	805	6/1/2001	oil	40,000	HECO	29,300	PCB/DCMA	--	--	--

Notes: 1. PCB -- polychlorinated biphenyls

2. mg/kg - milligrams per kilograms

3. HECO - Hawaiian Electric Company analytical method approved by EPA September 1980 performed on untreated oil samples by HECO's analytical laboratory in Hawaii

4. PCB/DCMA - PCB analytical method using (DCMA) performed on treated oil samples by SD Myers in Tallmadge, Ohio

5. MRI - Environmental Protection Agency's contract laboratory analyzed sample split by EPA Method 8082.



**COPY**

October 30, 2001

Tetra Tech EM, Inc.  
Attn: Notifications  
135 Main Street  
San Francisco, CA 94105

Re: Provisional EPA ID Number for Terada at Hawaiian Electric Company's Ewa Nui Substation

Dear Sir/Madam:

Per my conversation with Tetra Tech's "Patrick" on October 30, 2001(415-495-8895), we are seeking a provisional (temporary) EPA ID number for our Ewa Nui Substation on behalf of a Japanese company (Terada) for whom we hosted a PCB-remediation test earlier this year. This test was conducted under a test permit issued by EPA's Office of Prevention, Pesticides and Toxic Substances (Washington, DC). A copy of the test permit is enclosed.

As the testing (and consequently the waste generated) was performed using equipment owned and operated by Terada, we wish to establish the provisional EPA ID number in Terada's name. Mr. Shigeo Seki, Vice President of Terada, has signed the enclosed 8700-12 form. His business card is enclosed.

As the Honolulu office of Terada is staffed on a part-time basis only, please feel free to contact me at (808) 543-4523 if you have any questions regarding the information submitted.

Sincerely,

Andrew Keith  
Senior Environmental Scientist

**WINNER OF THE EDISON AWARD**  
FOR DISTINGUISHED INDUSTRY LEADERSHIP



<small>Please refer to Section V, Line-by-Line Instructions for Completing EPA Form 8700-12 before completing this form. The information requested here is required by law (Section 3010 of the Resource Conservation and Recovery Act).</small>		<b>Notification of Regulated Waste Activity</b> <b>EPA</b> United States Environmental Protection Agency		<b>Date Received</b> (For Official Use Only)	
<b>I. Installation's EPA ID Number (Mark 'X' in the appropriate box)</b>					
<input checked="" type="checkbox"/> A. Initial Notification		<input type="checkbox"/> B. Subsequent Notification (Complete item C)		C. Installation's EPA ID Number	
<b>II. Name of installation (Include company and specific site name)</b>					
Tera-da-Ewa Nui Substation					
<b>III. Location of Installation (Physical address not P.O. Box or Route Number)</b>					
Street					
91-1440 Farrington Highway					
Street (Continued)					
City or Town				State	Zip Code
Kapolei				HI	96822-
County Code	County Name				
	Honolulu				
<b>IV. Installation Mailing Address (See instructions)</b>					
Street or P.O. Box					
441 Kapiolani Boulevard #1203					
City or Town				State	Zip Code
Honolulu				HI	96814-
<b>V. Installation Contact (Person to be contacted regarding waste activities at site)</b>					
Name (Last)			(First)		
Seki			Shigeo		
Job Title			Phone Number (Area Code and Number)		
Vice President			808-946-1258		
<b>VI. Installation Contact Address (See instructions)</b>					
A. Contact Address Location		B. Street or P.O. Box			
<input checked="" type="checkbox"/>					
City or Town				State	Zip Code
					-
<b>VII. Ownership (See instructions)</b>					
<b>A. Name of Installation's Legal Owner</b>					
Hawaiiiah Electric Company					
Street, P.O. Box, or Route Number					
PO Box 2750 MS HPO-JW					
City or Town				State	Zip Code
Honolulu				HI	96840-0001
Phone Number (Area Code and Number)			B. Land Type	C. Owner Type	D. Change of Owner Indicator
808-543-4523			P	P	Yes <input type="checkbox"/> No <input type="checkbox"/>
					Month Day Year

ID - For Official Use Only

## VIII. Type of Regulated Waste Activity (Mark 'X' in the appropriate boxes. Refer to Instructions)

## A. Hazardous Waste Activities

1. Generator (See Instructions)
- ☒ a. Greater than 1000kg/mo (2,200 lbs.)
- ☐ b. 100 to 1000 kg/mo (220-2,200 lbs.)
- ☐ c. Less than 100 kg/mo (220 lbs.)
2. Transporter (Indicate Mode in boxes 1-5 below)
- ☐ a. For own waste only
- ☐ b. For commercial purposes
- Mode of Transportation
- ☐ 1. Air
- ☐ 2. Rail
- ☐ 3. Highway
- ☐ 4. Water
- ☐ 5. Other - specify \_\_\_\_\_
3. Treater, Storer, Disposer (at Installation) Note: A permit is required for this activity, see instructions.
4. Exempt Boiler and/or Industrial Furnace
- ☐ a. Smelting, Melting, and Refining Furnace Exemption
- ☐ b. Small Quantity On-Site Burner Exemption
5. Underground Injection Control

## C. Used Oil Management Activities

1. Used Oil Transporter/Transfer Facility - Indicate Type(s) of Activity(ies)
- ☐ a. Transporter
- ☐ b. Transfer Facility
2. Used Oil Processor/Re-refiner - Indicate Type(s) of Activity(ies)
- ☐ a. Processor
- ☐ b. Re-refiner
3. Off-Specification Used Oil Burner
4. Used Oil Fuel Marketer
- ☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Used Oil Burner
- ☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

## B. Universal Waste Activity

- ☐ Large Quantity Handler of Universal Waste

## IX. Description of Hazardous Wastes (Use additional sheets if necessary)

## A. Listed Hazardous Wastes. (See 40 CFR 261.31 - 33; See instructions if you need to list more than 12 waste codes.)

1	2	3	4	5	6
7	8	9	10	11	12

## B. Characteristics of Nonlisted Hazardous Wastes. (Mark 'X' in the boxes corresponding to the characteristics of nonlisted hazardous wastes your installation handles; See 40 CFR Parts 261.20 - 261.24; See instructions if you need to list more than 4 toxicity characteristic waste codes.)

(List specific EPA hazardous waste number(s) for the Toxicity Characteristic contaminant(s))

1. Ignitable (D001)	2. Corrosive (D002)	3. Reactive (D003)	4. Toxicity Characteristic	1	2	3	4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

## C. Other Wastes. (State-regulated or other wastes requiring a handler to have an I.D. number; See Instructions.)

1	2	3	4	5	6

## X. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature

Name and Official Title (Type or print)

Date Signed

## XI. Comments

Please see attached documents

Note: Mail completed form to the appropriate EPA Regional or State Office. (See Section IV of the booklet for addresses.)

ID - For Official Use Only

## IX. Description of Hazardous Wastes (Continued; Additional Sheet)

## A. Listed Hazardous Wastes. (See 40 CFR 261.31 - 33; Use this page only if you need to list more than 12 waste codes.)

13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
79	80	81	82	83	84
85	86	87	88	89	90
91	92	93	94	95	96

## B. Toxicity Characteristic Hazardous Wastes. (See 40 CFR 261.24; Use this page only if you need to list more than 4 waste codes.)

5	6	7	8	9	10
11	12	13	14	15	16
17	18	19	20	21	22



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

AUG 17 2000

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Ms. Maya Rohr, Senior Project Manager  
Kleinfelder, Inc.  
5015 Shoreham Place  
San Diego, California 92122

Mr. Donn Fukuda  
Hawaiian Electric Company  
Environmental Department  
P.O. Box 2750  
Honolulu, HI 96840

Dear Ms. Rohr and Mr. Fukuda:

The National Program Chemicals Division (NPCD) of the Office of Pollution Prevention and Toxics (OPPT) of the U.S. Environmental Protection Agency (EPA) grants a joint approval to perform PCB Disposal Research and Development (R&D), to Terada Environmental Laboratory, LTD. (Terada) and to the Hawaiian Electric Company (HECO). Terada is the owner and operator of the Terada mobile PCB dechlorination technology and HECO is the owner of the site of the R&D study operations. This R&D approval applies only to the mobile three kiloliter capacity batch process unit. Enclosed is the approval document for the R&D studies entitled "Approval to Conduct Research and Development Tests to Dispose of Polychlorinated Biphenyls (PCBs), Removal of PCBs at the Hawaiian Electric Company, Honolulu, Hawaii." NPCD approves the disposal of three kiloliters of PCB liquid material for each treatability study and thirty (30) kiloliters of PCB liquid material total under this approval. Effective dates are from August 18, 2000 through November 18, 2000.

NPCD completed its review of the document entitled "PCB Treatment Technology Report" received by EPA on July 22, 1999 and letter dated August 4, 2000 in consideration of the issuance of a PCB R&D Approval pursuant to 40 CFR 761.60(e) (Alternate Method) and the Toxic Substance Control Act (TSCA) to destroy PCBs in liquid materials using the Terada mobile PCB dechlorination technology.



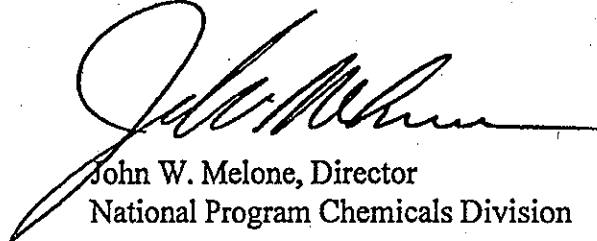
Recycled/Recyclable  
Printed with Soy-based Ink on paper that

Terada uses a proprietary reagent to treat PCB liquid material in a mixing reaction vessel. The reactor is enclosed and exhausted through a carbon adsorption system to capture volatile compounds. The process unit will treat three-liter batches of PCB contaminated liquid.

Terada intends to use liquid PCBs currently owned and stored for disposal by HECO to demonstrate the Terada PCB dechlorination technology to obtain a TSCA nationwide PCB Disposal Approval. To maintain availability of this PCB for the Terada demonstration, EPA extends the disposal deadline to December 31, 2001; or until the completion of the demonstration tests for the PCB Disposal Approval, whichever occurs first. HECO must initiate disposal procedures within 30 days after the completion of Terada's demonstration tests.

On completion of the studies, Terada and HECO must dispose of all materials resulting from these tests in EPA-approved facilities by the disposal deadline of December 31, 2001 or upon completion of a formal PCB disposal demonstration for EPA confirmation of PCB destruction effectiveness, whichever occurs first. Please direct matters concerning this subject to Hiroshi Dodohara of my staff on (202) 260-3959.

Sincerely,



John W. Melone, Director  
National Program Chemicals Division

Enclosure

cc: Max Weintraub  
USEPA Region IX

Yosh Tokiwa  
USEPA Region IX



Enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
APPROVAL TO CONDUCT RESEARCH AND DEVELOPMENT TESTS  
TO DISPOSE OF POLYCHLORINATED BIPHENYLS (PCBS)  
REMOVAL OF PCBs FROM LIQUID PCB MATERIAL  
THREE KILOLITERS PCB DECHLORINATION TECHNOLOGY  
LIMITED TO OPERATIONS AT THE HAWAIIAN ELECTRIC COMPANY FACILITY  
HONOLULU, HAWAII

TERADA ENVIRONMENTAL LABORATORY, LTD.  
T901-1111 OHYAMA BLD.  
292-2 AZA KANEGUSUSKU  
HAEBARU-TOWN, SIMAJIRI GUN  
OKINAWA, JAPAN

HAWAIIAN ELECTRIC COMPANY  
HONOLULU, HAWAII

This approval is issued to Terada Environmental Laboratory, LTD. (Terada) of Okinawa, Japan to conduct research and development (R&D) tests on Terada's alternate method of PCB disposal. The purpose of this R&D activity is to remove PCBs in liquid material using a proprietary reagent, to levels less than 2 ppm PCBs. Other media containing PCBs may be treated by Terada only through EPA approval of a proposed major modification to this approval. The R&D studies are being conducted to remove PCBs from liquids contained in electrical and other equipment to verify the proficiency of the PCB disposal process.

Authority

This approval to conduct R&D into PCB disposal is issued pursuant to Section 6(e)(1) of the Toxic Substances Control Act of 1976 (TSCA), Public Law No. 94-469, and the Federal PCB Regulations, 40 CFR Part 761.60(e), (48 Federal Register, 13185, March 30, 1983).

Effective Dates

This R&D approval is effective from August 18, 2000 through November 18, 2000.

### Proposed Test

Terada Environmental Laboratory, LTD. proposes to perform research and development to destroy PCBs in liquid PCB material. They will use the Terada chemical dechlorination process to destroy PCBs in liquid material. Terada plans to perform ten tests on soils ranging from as received, 534 ppm PCBs, to capacitor oil which may contain 100% PCBs. Terada intends to blend the high PCB-containing liquids using recycled material. Terada plans to vary ratios of reagent and liquid material to optimize operating conditions. Each test will last for about four hours.

At the conclusion of each test, the reactor contents will be placed in a clean container and stored for disposal. The company will collect samples of feed, product and side streams, before and after treatment, to transport to a third party laboratory for analysis.

On completion of the studies, Terada must dispose of the all materials resulting from the tests in EPA-approved facilities or stored for EPA confirmation of PCB content.

### Definitions:

1. "Project" means all work performed by Terada under a specific contract for a treatability study.
2. "Run" means a single experiment.
3. "Study" or "treatability study" refers to work performed on a sample or a group of samples submitted for a specific remediation site or for a specific objective.
4. "A test" refers to all work performed on a single sample.

### Conditions of Approval:

1. Advance Notification: A thirty-day advance notification of the tests must be provided to the appropriate EPA Regional Administrator and the State and local officials where the Terada PCB removal process will be tested. This notice must include the exact site and date using the treatment process along with an estimate of the length of study at the site. A copy of the notice shall be submitted to EPA Headquarters.
2. Other Permits and Approvals: No operation may commence until Terada has obtained all necessary approvals and/or permits from other Federal, State and local agencies. Terada is responsible for obtaining such approvals/permits where appropriate.
3. Feedstock Restrictions: The quantity of PCB liquid material for this approval will be limited to 30 liters total, 3 liters for each treatability study, with a maximum PCB concentration of 5,000 ppm PCBs. Reagents for this R&D approval will be restricted to that outlined in the July 1999

"PCB Treatment Technology Report." Prior to treatment in the Terada process, PCB feed must be sampled and analyzed according to EPA-approved procedures that are outlined in the following documents:

"Guidelines for PCB Destruction Permit Applications and Demonstration Test Plans",  
EPA Contract No. 68-02-3938,  
April 16, 1985;

"Quality Assurance and Quality Control Procedures for Demonstrating PCB Destruction in Filing for an EPA Disposal Permit;" USEPA, June 28, 1983 (Draft);

"Recommended Analytical Requirements for PCB Data Generated on-Site During Non-thermal PCB Destruction Tests"  
March 19, 1986; and

"Interim Guidelines and Specifications for Preparing Quality Assurance Plans", QAMS-005/80, Office of Research and Development, USEPA, December 29, 1980.

4. Process Restrictions. Terada shall establish a secondary containment system (berm or equivalent) in the processing area for management of liquid waste to ensure inadvertent releases of PCBs and PCB-related hazardous waste into the environment do not occur. Terada shall sample and analyze for PCBs all fluids accumulating in the process area containment system. The fluid must meet all other applicable Federal, State or local regulatory requirements specific for the project, prior to discharge.

5. Process Waste Restrictions: Terada shall analyze for PCBs, all wastes generated during the course of operations, including the following: filter media, carbon adsorption media, and sediment from reactor and treated material tanks. On completion of the studies, Terada and HECO must dispose of all materials resulting from these tests in EPA-approved facilities by the disposal deadline of December 31, 2001 or upon completion of a formal PCB disposal demonstration for EPA confirmation of PCB destruction effectiveness, whichever occurs first. EPA-approved analytical methods for PCBs in different phases (water, solids and oil) must be used by Terada in making such determinations.

If waste feedstock is reinforced/spiked by liquid material required by regulation to be incinerated, all process wastes must be managed in one of three ways: (1) incinerated, (2) disposed of by treatment equivalent to incineration, or (3) non-liquids may be disposed of in an EPA-approved TSCA landfill.

6. Storage of PCBs: Terada intends to use liquid PCBs currently owned and stored for disposal by HECO to demonstrate the Terada PCB dechlorination technology to obtain a TSCA nationwide PCB Disposal Approval. The PCB liquids currently on site include the following material: One 55 gallon drum (#27367) of transformer oil containing 534 ppm PCBs and two gallons of capacitor oil (Drum #57). EPA grants an extension, for these PCBs only, on the one-

year storage for disposal deadline to December 31, 2001; or until the completion of the demonstration tests for the PCB Disposal Approval, whichever occurs first. HECO must initiate disposal procedures within 30 days after the completion of Terada's demonstration tests. HECO and Terada may store PCBs and PCB Items at concentrations of 50 ppm or greater subject to the following conditions:

- a. Storage in a Facility Complying with 40 CFR 761.65(b)(1): Pursuant to this approval, HECO and Terada may
  - (1) store, at any one time, PCBs and PCB Items in quantities up to 70 cubic feet for non-liquid material, 500 liquid gallons, or combined liquid and non-liquid PCBs up to ten 55-gallon drums and is not subject to the PCB Commercial Storage approval requirements at 40 CFR 761.65(d), or
  - (2) store PCBs and PCB Items in quantities greater than 70 cubic feet for non-liquid material, 500 liquid gallons, or combined liquid or non-liquid PCBs up to ten 55-gallon drums and is subject to the PCB Commercial Storage approval requirements at 40 CFR 761.65(d). These requirements include, in part, the submission of: a closure plan, a closure cost estimate, and financial assurance for closure.
- b. Storage in Facilities which Comply with 40 CFR 761.65(b)(2): Pursuant to this demonstration approval, HECO and Terada may store PCB and PCB Items in a facility which is:
  - (1) permitted under EPA under Section 3004 RCRA or has achieved interim status under Section 3005 of RCRA,
  - (2) permitted by a State authorized under Section 3006 of RCRA,
  - (3) approved or regulated under a State PCB waste management program no less stringent than the requirements at found in this Part,
  - (4) subject to a TSCA Coordinated Approval pursuant to 40 CFR 761.77 which includes provisions for PCB storage, or
  - (5) permitted under a TSCA waste management approval pursuant to 40 CFR 761.61© and 761.61(c).
- c. Storage in an Area which Does not Comply with 40 CFR 761.65(b): Pursuant to this approval, HECO and Terada may temporarily store for not more than thirty days the following PCB Items in a facility which does comply with provisions under 40 CFR 761.65(b) provided that a notation is attached to the PCB Item or a PCB Container containing the PCB Item indicating the date the item was removed from service or generated as a waste,

- (1) Non-Leaking PCB Articles and PCB Equipment,
- (2) Leaking PCB Articles and PCB Equipment provided the items are placed in a non-leaking PCB container that contains sufficient sorbent material to absorb remaining liquid PCBs in the item,
- (3) PCB Containers containing non-liquid PCBs such as contaminated soil, rags and debris,
- (4) PCB containing liquids PCBs at concentrations of  $\geq 50$  ppm, provided a Spill Prevention, Control and Countermeasure Plan has been prepared for the temporary storage area in accordance with part 112 of this chapter and the liquid PCB waste is in Packaging authorized in the DOT Hazardous Material Regulations at 40 CFR Parts 171 through 180 or stationary bulk storage tanks (including rolling stock such as, but not limited to, tanker trucks, as specified by DOT.

- d. Any PCB material not disposed of or meeting the destruction efficiency criteria under this approval shall be disposed of at EPA approved facilities. As an alternative, HECO and Terada may elect to dispose of any remaining PCB liquid following disposal procedures outlined in the pending PCB Disposal Demonstration Approval under the Interim Operations paragraph.

7. Transport of PCBs: Untreated PCB-containing water, solvent or solids may not be transported off-site by the Terada treatment unit except for proper disposal. PCB-contaminated equipment on the Terada PCB disposal units may be transported off-site in accordance with the U.S. Department of Transportation (DOT) requirements of Title 49, CFR Part 172. Such requirements include placarding the mobile facility and labeling all PCBs.

8. Process Malfunction: If the quality control testing as described in the R&D request reveals that the PCBs have not been adequately removed from the soil and/or water after repeated processing (not to exceed three times the theoretical process time or passes necessary for complete removal), disposal activities may be ordered to cease until an adequate explanation is given and corrective measures are taken. A written report detailing the problem and solution shall be filed with the EPA Region IX Office and the National Program Chemicals Division, Office of Pollution Prevention and Toxics, U.S. EPA, Washington, D.C. within five business days.

9. Process Monitoring/Recording: Provisions must be made to assure that the following process elements are suitably monitored and recorded for each batch processed, such that materials harmful to health or the environment are not inadvertently released:

- a. quantity and concentration of PCBs and other raw materials processed during the disposal of PCB in contaminated material;

- b. quantity and quality of treated fluid produced and treated;
- c. quantity and quality of process waste generated (i.e., sludge, filter media, water, spent solvent or other effluents), including vent gases or other emissions;
- d. PCB exposure in the working area;
- e. temperature and pressure of the chemical dechlorination process at minimum in one-half hour intervals;
- f. name of operator and supervisor.

This information and all pertinent test data shall be incorporated into a test report and submitted to EPA Headquarters no later than 60 days after the completion date of the testing.

#### 10. R&D Test Report

All test results and related information on this R&D project shall be incorporated into a test report and submitted to NPCD for evaluation. The R&D Test Report shall include, at a minimum, the following items:

- A. Certification letter. This letter, signed by an authorized official, must certify on behalf of the applicant that the tests were carried out in accordance with the approved application and the results of all determinations are submitted in the report. Any changes or deviations by the applicant from the application must be documented and submitted in writing to the Environmental Protection Agency (EPA).
- B. Detailed discussion of all process operations, operational problems, if any, and corrective actions.
- C. Chronology of significant events.
- D. Quality assurance (QA) report. This shall address all the QA objectives, including whether or not precision and accuracy objectives were met, as well as results of quality control samples, performance audit samples and systems audits.
- E. Waste handling. Applicant shall provide documentation (copies of manifest and certificates of destruction) to show all wastes generated during the R&D process test were properly disposed according to TSCA and Resource Conservation and Recovery Act (RCRA) regulations.

EPA will not make a decision to issue another approval on the Terada process based on changes resulting from this R&D until no less than 30 days following the receipt of this R&D Test Report.

11. PCB Releases: In the event Terada or an authorized facility operator of the Terada PCB dechlorination process believes, or has reason to believe that a release has or might have occurred, the facility operator must inform the Fibers and Organic Branch Chief (202-260-3933) and the EPA Region IX PCB Coordinator immediately.

A written report describing the incident must be submitted by the close of business on the next regular business day. No PCBs may be processed in that facility until the release problem has been corrected to the satisfaction of EPA Region.

12. Facility Inspection: EPA employees shall have access to the Terada process during the test runs for purposes of inspection, observation, or sampling. This access is subject to the normal safety requirements placed on Terada personnel or their agents.

13. Safety and Health: Terada or its agents must take all necessary precautionary measures to ensure that operation of the Terada process is in compliance with the applicable safety and health standards, as required by Federal, State and local regulations and ordinances. Any lost-time personal injury occurring as result of the Terada process must be reported to the EPA Region IX PCB Coordinator by the next regular business day.

14. Facility Security: The Terada process shall be secured (e.g., fence, alarm system, etc.) at the test site to restrict public access to the area.

15. PCB Spills: Any spills of PCBs or other fluids shall be promptly controlled and cleaned up as provided in the Terada Spill Prevention Plan. In addition, a written report describing the spill, operations involved, and cleanup actions must be submitted to EPA Region IX within five (5) business days.

16. Personnel Training: Terada is responsible for ensuring that personnel directly involved with the handling or disposal of PCB-contaminated material using the Terada process, are demonstrably familiar with the general requirements of this R&D approval. At a minimum this must include:

- a. the type of material which may be treated during the testing of the Terada process and the upper limit of the PCB contamination which may be treated;
- b. basic reporting and recordkeeping requirements under this R&D approval and the location of records at the test site;
- c. notification requirements; and
- d. waste disposal requirements for process and by-product wastes generated during the testing of the Terada PCB disposal process.

In this regard, Terada must maintain on-site during the testing of its soil treatment process a copy of this R&D approval; the Spill Prevention Control and Cleanup Plan; and sampling and analytical procedures used to determine PCB concentrations in untreated and treated materials.

17. PCB Regulations Compliance: Terada shall comply with all applicable requirements of the Federal PCB Regulations, 40 CFR Part 761, in the operation of the Terada process; particular note should be given to:

- a. 40 CFR, section 761.65 - storage for disposal;
- b. 40 CFR, section 761.79 - decontamination; and
- c. 40 CFR, section 761.180 - records and monitoring.

18. Permit Variance: Any departure from the conditions of this research and development approval or the terms expressed in the application, demonstration plan, and R&D plan from



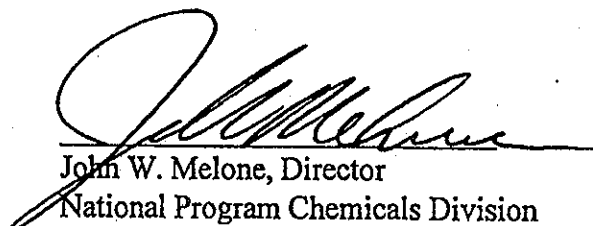
Terada must receive authorization from EPA. Verbal authorizations by EPA must be followed within ten working days by a written notification from Terada describing all modifications. In this context, "application, demonstration plan, and R&D plan" shall be defined as all data and materials which have been received by this Agency from the Terada regarding the Terada PCB disposal method.

Under the above conditions, and given the circumstances under which the research and development tests will be conducted, the National Program Chemicals Division finds, pursuant to 40 CFR 761.60(e), that these tests will not present an unreasonable risk of injury to health or the environment.

Approval:

Approval to conduct research and development into PCB disposal is hereby granted to Terada Environmental Laboratory, LTD of Okinawa, Japan subject to the conditions expressed herein, and consistent with the materials and data included in Terada's submission. This R&D approval is valid when conducted at the Hawaii Electric Company facility in Honolulu, Hawaii.

8/17/00  
Date

  
John W. Melone, Director  
National Program Chemicals Division

## APPENDIX

### BACKGROUND

Section 6(e)(1)(A) of the Toxic Substances Control Act (TSCA) requires that EPA promulgate rules for the disposal of polychlorinated biphenyls (PCBs). The rules implementing section 6(e)(1)(A) were published in the Federal Register of May 31, 1979 (44 FR 31514) and recodified in the Federal Register of May 6, 1982 (47 FR 19527). Those rules require, among other things, that various types of PCBs and PCB Articles be disposed of in EPA-approved landfills (40 CFR 761.75), incinerators (40 CFR 761.70), high efficiency boilers (40 CFR 761.60), or by alternative methods (40 CFR 761.60(e)) that demonstrate a level of performance equivalent to EPA-approved incinerators or high efficiency boilers. The May 31, 1979 Federal Register also designated Regional Administrators as the approval authority for PCB disposal facilities.

On March 30, 1983, EPA issued a procedural rule amendment to the PCB rule (48 FR 13185). This procedural rule change transferred the review and approval authority of mobile and other PCB disposal facilities that are used in more than one region to the Office of Prevention Pesticides and Toxics Substances (OPPTS). The purpose of the amendment is to eliminate duplication of effort in the regional offices and to unify the Agency's approach to PCB disposal. The amendment gives the Assistant Administrator authority to issue nationwide approvals (i.e., approvals which will be effective in all ten EPA regions) to mobile and other PCB disposal facilities that are used in more than one region.

Terada submitted a PCB Application July 22, 1999. Request for an R&D application was submitted August 4, 2000 based on the July 1999 submission. The application for a research and development approval to dispose of PCBs pertaining to an alternate disposal method to destroy PCBs in liquid material using a reagent. The Terada unit is a transportable reactor unit capable of treating three liters of material per batch. A description of the unit is on file in EPA Headquarters.

### Business Confidentiality

Pursuant to the regulations at 40 CFR Part 2, Subpart B (41 Federal Register, 36905, September 1, 1976, and 43 Federal Register, 39997, September 8, 1978), Terada or its authorized agent is entitled to assert a business confidentiality claim covering any information you submit under this R&D approval. If such a confidentiality claim is not asserted with any submission, EPA may make this information available to the public without further notice to you. Information subject to a business confidentiality claim may be made available to the public only to the extent set forth in the above cited regulations. Any such claim for confidentiality must conform to the requirements set forth in 40 CFR §2.203(b).

Liability

The issuance of this R&D approval does not release Terada or their authorized agent from any liability for damage to persons or property caused by or resulting from the operation or maintenance of equipment covered by this approval. The conditions of this approval are enforceable under the Toxic Substances Control Act (the Act) and its implementing regulations, 40 CFR Part 761. Any actions by Terada or its authorized agent which violate the terms and conditions of this letter, the Act, or the regulations issued thereunder, may result in administrative, civil, or criminal enforcement by EPA in accordance with Section 16 of the Act, 15 U.S.C. §2615.

FINDINGS:

1. The Terada process is a batch process to treat PCB liquid with a reagent. The reagent and PCBs in oil are pumped into the reactor and maintained at a temperature of approximately 40°C. Terada claims that the reaction is complete in 30 min to 40 min.
2. The Terada Process consists of a reactor tank, feed holding tank, liquid pumps, carbon filter and blower.
3. The Terada process does not emit harmful materials into the air, water, soils, or other surfaces. Liquid and solid wastes will be disposed of by incineration or chemical waste landfill at an EPA-approved disposal site or stored for EPA confirmation.
4. Terada has submitted data which indicate that their Terada process has capability to remove PCBs from PCB liquid material to meet standards set by an EPA-approved incinerator or high efficiency boiler. Furthermore, the Terada unit precludes emissions or discharges to the atmosphere. Terada equipment will be decontaminated, if applicable, filter media will be removed, then packaged in Department of Transportation (DOT) and EPA acceptable containers to store and to transport for disposal. Therefore, EPA finds that an approval for research and development operations of the Terada PCB disposal method is equivalent to operations conducted on a 40 CFR Part 761.70 incinerator or 40 CFR Part 761.60 high efficiency boiler and that the operations of the Terada PCB disposal unit does not pose an unreasonable risk of injury to human health or the environment.

Enclosure 2

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

GENERATOR

FA

Y

UNIFORM HAZARDOUS  
WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No.

2. Page 1

Information in the shaded areas  
is not required by Federal law.

3. Generator's Name and Mailing Address

TERADA-EWA NUI SUBSTATION  
91-1440 FARRINGTON HIGHWAY  
KAPOLEI, HI 96822

4. Generator's Phone (808) 946-1258

5. Transporter 1 Company Name

HAZTECH ENVIRONMENTAL SERVICES

7. Transporter 2 Company Name

RHS LEE, INC

9. Designated Facility Name and Site Address

CHEMICAL WASTE MANAGEMENT  
35251 OLD SKYLINE RD.  
KETTLEMAN HILLS, CA 98239

6. US EPA ID Number

H I R 0 0 0 0 5 0 3 3 6

8. US EPA ID Number

H I D 0 0 0 0 7 6 8 5 1

10. US EPA ID Number

C A T 0 0 0 6 4 6 1 1 7

A. State Manifest Document Number

21462985

B. State Generator's ID

C. State Transporter's ID (Reserved)

D. Transporter's Phone

(808) 671-1985

E. State Transporter's ID (Reserved)

F. Transporter's Phone

(808) 455-9026

G. State Facility's ID

C A T 0 0 0 6 4 6 1 1 7

H. Facility's Phone

(559) 386-9711

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)

NON-RCRA HAZARDOUS WASTE SOLID (POLY TANKS  
CONTAMINATED WITH SODIUM HYDROXIDE)

12. Containers  
No. Type

002 CM

13. Total  
Quantity

0.2000

14. Unit  
Wt/Vol

P

I. Waste Number

State 181261  
EPA/Other

State

EPA/Other

State

EPA/Other

State

EPA/Other

K. Handling Codes for Wastes Listed Above

a. b.  
c. d.

J. Additional Descriptions for Materials Listed Above

PROFILE #EB5305

15. Special Handling Instructions and Additional Information

24 HOUR EMERGENCY NUMBER: (800) 424-9300 WMI CONTRACT  
CERTIFICATE OF DISPOSAL REQUIRED/CONTAINER #  
HAZTECH JOB # 01-383

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name

SHIGEO SEKI

Signature

[Signature]

Month Day Year  
12/10/01

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Don P. Ramsey

Signature

[Signature]

Month Day Year  
12/18/01

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature

Month Day Year

DO NOT WRITE BELOW THIS LINE.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

AUG 22 2006

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Mr. Tadamitsu Umeno  
Member of City Assembly  
Prism Tower 1203  
390-3 Hondosu-machi  
Tosu-shi  
Saga-ken, Japan, 841-0026

Dear Mr. Umeno:

This is in response to your inquiry to Mr. Max Weintraub, Regional PCB Coordinator for the U.S. Environmental Protection Agency (EPA) Region 9 regarding "US EPA ID NUMBER HIP 000108407" dated June 27, 2006 concerning the Terada Environmental Laboratory (Terada) PCB Disposal Approval (permit) procedure. As Mr. Shunichi Terada informed you, Terada demonstrated the Terada PCB disposal technology during the period from May 28<sup>th</sup> to June 1<sup>st</sup>, 2001, in an attempt to obtain a PCB Disposal Approval from EPA. For the reasons described below, EPA did not issue an Approval or any official certificate or letter certifying the efficacy of the Terada PCB process. An Approval would authorize the Permittee to operate their process equipment under the Toxic Substance Control Act (TSCA). Terada performed three tests in the presence of my staff who collected split samples of the transformer waste oil and the treated transformer waste oil. The table in Appendix A presents the results of the tests which are a summary of the data in the sampling log provided in Appendix B.

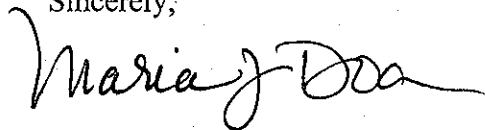
Results of the Terada tests indicate little reduction in the concentration of PCBs in the transformer oil. In some instances, the PCB concentration increased after treatment. One possible explanation for this phenomenon may be by the chemical reaction of the alkali reagent with the oil, termed saponification, similar to the production of soap. Only a portion of the transformer oil would be saponified and then emulsified or "dissolved" in the reagent. Because the reagent does not saponify PCBs, the PCBs remain in the transformer oil raising the PCB concentration in the remaining transformer oil.

To be eligible for an EPA PCB Disposal Approval under TSCA, a chemical dechlorination technology such as the Terada process must destroy PCBs as well as an incinerator or must be equivalent to an incinerator. The Applicant, Terada, must demonstrate that the process meets the EPA criteria of 2 ppm PCB in the treated material. The Terada process did not achieve this level and consequently does not qualify for a PCB Disposal Approval.

To clarify the issuance of the EPA ID number HIP 000108407, the EPA Region 9 office under the Resource Conservation and Recovery Act (RCRA) issued this provisional number, which is valid for 90 days, jointly to Terada and the Ewa Nui Substation, owned by the Hawaiian Electric Company, Inc. (HECO). Upon completion of the PCB Disposal Demonstration at the Ewa Nui Substation, Terada was responsible for the disposal of all waste generated during the demonstration tests, including hazardous waste. To transport and to dispose of hazardous waste, the generator of the hazardous waste must possess an EPA ID number. Thus, HECO requested the Region 9 office (Tetra Tech EM, Inc. is the EPA contractor) for a provisional or temporary EPA ID number on behalf of Terada. The request named Mr. Shigeo Seki, Vice President, as the Terada representative (see Enclosure 1). The Uniform Hazardous Waste Manifest presented in Enclosure 2 clearly identifies the owner of the EPA ID number HIP 000180407 to be Terada, signed by Mr. Seki, and transporting sodium hydroxide contaminated hazardous waste to Chemical Waste Management located in Kettleman Hills, California, USA. Manifests are legal forms used to record the shipment of hazardous waste from one location to another. Lastly, this provisional ID number was issued on November 1, 2001 and because provisional numbers are valid for 90 days, the EPA ID number HIP 000108407 is no longer valid.

Please contact Hiroshi A. Dodohara of my staff at (202) 566-0507 if you have any questions pertaining to this correspondence.

Sincerely,



Maria J. Doa, Ph.D.  
Director  
National Program Chemicals Division

Enclosure

cc: Max Weintraub, PCB Coordinator  
EPA Region 9

Andrew Keith  
Hawaiian Electric Company, Inc

Appendix A  
 Test Results from the Terada Environmental Laboratory  
 PCB Disposal Demonstration at the  
 Hawaii Electric Company  
 Ewa Nui Substation  
 May 28 – June 1, 2001.

RUN NO.	Initial PCB Concentration		Final PCB Concentration	
	Untreated Oil, ppm		Treated Oil, ppm	
	Terada <sup>1</sup>	EPA	Terada <sup>2</sup>	EPA
1A	10,200	6,530	11,000	7,610
1B	13,300	2,430	11,500	8,360
1B Dup	13,300	2,390	15,000	8,100
2A	17,000	18,100	15,500	10,100
2B	20,000	26,800	25,300	10,100
2B Dup	20,000	-	25,300	-
3A	35,000	43,700	39,500	21,300
3B	40,000	17,800	29,100	17,900
3B Dup	40,000	-	29,300	-

<sup>1</sup> Analysis by Hawaii Electric Company on behalf of Terada

<sup>2</sup> Analysis by S.D. Myers, Terada contractor

Dup means duplicate analysis

Appendix B  
Sampling Log from the TSCA Demonstration Tests

Test Run	Sample ID	Sample Date	Sample Time	Shipment Date	Sample Matrix	Initial PCB1 Concentration (mg/kg) <sup>2</sup>	Analytical Method	Post Treatment Concentration (mg/kg)	Analytical Method	MRI Initial Concentration	MRI Analytical Results (mg/kg)	Analytical Method
1A	HA052901-01	5/29/2001	1530	6/1/2001	oil	10,200	HECO3	11,000	PCB/DCMA4	6,530	7,610	EPA 8082
1B	HA053001-01	5/30/2001	1030	6/1/2001	oil	13,300	HECO	11,500	PCB/DCMA	2,430	8,360	EPA 8082
1B DUP	HA053001-01D	5/30/2001	1030	6/1/2001	oil	13,300	HECO	15,000	PCB/DCMA	2,390	8,100	EPA 8082
2A	HA053001-02	5/30/2001	1345	6/1/2001	oil	17,000	HECO	15,000	PCB/DCMA	18,100	10,100	EPA 8082
2B	HA053001-03	5/30/2001	1640	6/1/2001	oil	20,000	HECO	25,300	PCB/DCMA	26,800	14,700	EPA 8082
2B DUP	HA053001-03D	5/30/2001	1640	6/1/2001	oil	20,000	HECO	25,300	PCB/DCMA	--	--	--
3A	HA060101-01	6/1/2001	1710	6/1/2001	oil	35,000	HECO	39,500	PCB/DCMA	43,700	21,300	EPA 8082
3B	HA060101-02	6/1/2001	800	6/1/2001	oil	40,000	HECO	29,100	PCB/DCMA	17,800	17,900	EPA 8082
3B DUP	HA060101-02D	6/1/2001	805	6/1/2001	oil	40,000	HECO	29,300	PCB/DCMA	--	--	--

Notes: 1. PCB – polychlorinated biphenyls

2. mg/kg - milligrams per kilograms

3. HECO - Hawaiian Electric Company analytical method approved by EPA September 1980 performed on untreated oil samples by HECO's analytical laboratory in Hawaii

4. PCB/DCMA - PCB analytical method using (DCMA) performed on treated oil samples by SD Myers in Tallmadge, Ohio

5. MRI - Environmental Protection Agency's contract laboratory analyzed sample split by EPA Method 8082.



Enclosure 1



**COPY**

October 30, 2001

Tetra Tech EM, Inc.  
Attn: Notifications  
135 Main Street  
San Francisco, CA 94105

Re: Provisional EPA ID Number for Terada at Hawaiian Electric Company's Ewa Nui Substation

Dear Sir/Madam:

Per my conversation with Tetra Tech's "Patrick" on October 30, 2001(415-495-8895), we are seeking a provisional (temporary) EPA ID number for our Ewa Nui Substation on behalf of a Japanese company (Terada) for whom we hosted a PCB-remediation test earlier this year. This test was conducted under a test permit issued by EPA's Office of Prevention, Pesticides and Toxic Substances (Washington, DC). A copy of the test permit is enclosed.

As the testing (and consequently the waste generated) was performed using equipment owned and operated by Terada, we wish to establish the provisional EPA ID number in Terada's name. Mr. Shigeo Seki, Vice President of Terada, has signed the enclosed 8700-12 form. His business card is enclosed.

As the Honolulu office of Terada is staffed on a part-time basis only, please feel free to contact me at (808) 543-4523 if you have any questions regarding the information submitted.

Sincerely,

Andrew Keith  
Senior Environmental Scientist

**WINNER OF THE EDISON AWARD**  
FOR DISTINGUISHED INDUSTRY LEADERSHIP



Please refer to Section V, Line-by-Line Instructions for Completing EPA Form 8700-12 before completing this form. The information requested here is required by law (Section 3010 of the Resource Conservation and Recovery Act).



# Notification of Regulated Waste Activity

Provisional

United States Environmental Protection Agency

Date Received  
(For Official Use Only)

## I. Installation's EPA ID Number (Mark 'X' in the appropriate box)



A. Initial Notification

B. Subsequent Notification  
(Complete item C)

C. Installation's EPA ID Number

## II. Name of Installation (Include company and specific site name)

Teralda-Ewa Nui Substation

## III. Location of Installation (Physical address not P.O. Box or Route Number)

Street

91-1440 Farrington Highway

Street (Continued)

City or Town

Kapolei

State

Zip Code

HI 96822-

County Code

County Name

H O H O L U I U

## IV. Installation Mailing Address (See instructions)

Street or P.O. Box

1441 Kapiolani Boulevard #1203

City or Town

H O H O L U I U

State

Zip Code

HI 96814-

## V. Installation Contact (Person to be contacted regarding waste activities at site)

Name (Last)

SeKi

(First)

Shigeo

Job Title

Vice president

Phone Number (Area Code and Number)

808-946-1258

## VI. Installation Contact Address (See instructions)

A. Contact Address  
Location Mailing

B. Street or P.O. Box

City or Town

State

Zip Code

## VII. Ownership (See instructions)

## A. Name of Installation's Legal Owner

Hawaiian Electric Company

Street, P.O. Box, or Route Number

PO Box 2750 MS HPO-JW

City or Town

H O H O L U I U

State

Zip Code

HI 96840-0001

Phone Number (Area Code and Number)

808-543-4523

B. Land Type

P

C. Owner Type

P

D. Change of Owner  
Indicator

Yes

No

Date Changed

Month

Day

Year

ID - For Official Use Only

## VIII. Type of Regulated Waste Activity (Mark 'X' in the appropriate boxes. Refer to Instructions)

## A. Hazardous Waste Activities

1. Generator (See Instructions)
- ☒ a. Greater than 1000kg/mo (2,200 lbs.)
- ☐ b. 100 to 1000 kg/mo (220-2,200 lbs.)
- ☐ c. Less than 100 kg/mo (220 lbs)
2. Transporter (Indicate Mode in boxes 1-5 below)
- ☐ a. For own waste only
- ☐ b. For commercial purposes

## Mode of Transportation

- ☐ 1. Air
- ☐ 2. Rail
- ☐ 3. Highway
- ☐ 4. Water
- ☐ 5. Other - specify

- ☐ 3. Treater, Storer, Disposer (at installation) Note: A permit is required for this activity, see Instructions.
4. Exempt Boiler and/or Industrial Furnace
- ☐ a. Smelting, Melting, and Refining Furnace Exemption
- ☐ b. Small Quantity On-Site Burner Exemption
- ☐ 5. Underground Injection Control

## C. Used Oil Management Activities

1. Used Oil Transporter/Transfer Facility - Indicate Type(s) of Activity(ies)
- ☐ a. Transporter
- ☐ b. Transfer Facility
2. Used Oil Processor/Re-refiner - Indicate Type(s) of Activity(ies)
- ☐ a. Processor
- ☐ b. Re-refiner
- ☐ 3. Off-Specification Used Oil Burner
4. Used Oil Fuel Marketer
- ☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Used Oil Burner
- ☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

## B. Universal Waste Activity

- ☐ Large Quantity Handler of Universal Waste

## IX. Description of Hazardous Wastes (Use additional sheets if necessary)

## A. Listed Hazardous Wastes. (See 40 CFR 261.31 - 33; See instructions if you need to list more than 12 waste codes.)

1	2	3	4	5	6
7	8	9	10	11	12

## B. Characteristics of Nonlisted Hazardous Wastes. (Mark 'X' in the boxes corresponding to the characteristics of nonlisted hazardous wastes your installation handles; See 40 CFR Parts 261.20 - 261.24; See instructions if you need to list more than 4 toxicity characteristic waste codes.)

(List specific EPA hazardous waste number(s) for the Toxicity Characteristic contaminant(s))

1. Ignitable (D001)	2. Corrosive (D002)	3. Reactive (D003)	4. Toxicity Characteristic
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## C. Other Wastes. (State-regulated or other wastes requiring a handler to have an I.D. number; See Instructions.)

1	2	3	4	5	6

## X. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature

Name and Official Title (Type or print)

Date Signed

## XI. Comments

Please see attached documents

Note: Mail completed form to the appropriate EPA Regional or State Office. (See Section IV of the booklet for addresses.)

ID - For Official Use Only

## IX. Description of Hazardous Wastes (Continued; Additional Sheet)

## A. Listed Hazardous Wastes. (See 40 CFR 261.31 - 33; Use this page only if you need to list more than 12 waste codes.)

13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
79	80	81	82	83	84
85	86	87	88	89	90
91	92	93	94	95	96

## B. Toxicity Characteristic Hazardous Wastes. (See 40 CFR 261.24; Use this page only if you need to list more than 4 waste codes.)

5	6	7	8	9	10
11	12	13	14	15	16
17	18	19	20	21	22



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

AUG 17 2000

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Ms. Maya Rohr, Senior Project Manager  
Kleinfelder, Inc.  
5015 Shoreham Place  
San Diego, California 92122

Mr. Donn Fukuda  
Hawaiian Electric Company  
Environmental Department  
P.O. Box 2750  
Honolulu, HI 96840

Dear Ms. Rohr and Mr. Fukuda:

The National Program Chemicals Division (NPCD) of the Office of Pollution Prevention and Toxics (OPPT) of the U.S. Environmental Protection Agency (EPA) grants a joint approval to perform PCB Disposal Research and Development (R&D), to Terada Environmental Laboratory, LTD. (Terada) and to the Hawaiian Electric Company (HECO). Terada is the owner and operator of the Terada mobile PCB dechlorination technology and HECO is the owner of the site of the R&D study operations. This R&D approval applies only to the mobile three kiloliter capacity batch process unit. Enclosed is the approval document for the R&D studies entitled "Approval to Conduct Research and Development Tests to Dispose of Polychlorinated Biphenyls (PCBs), Removal of PCBs at the Hawaiian Electric Company, Honolulu, Hawaii." NPCD approves the disposal of three kiloliters of PCB liquid material for each treatability study and thirty (30) kiloliters of PCB liquid material total under this approval. Effective dates are from August 18, 2000 through November 18, 2000.

NPCD completed its review of the document entitled "PCB Treatment Technology Report" received by EPA on July 22, 1999 and letter dated August 4, 2000 in consideration of the issuance of a PCB R&D Approval pursuant to 40 CFR 761.60(e) (Alternate Method) and the Toxic Substance Control Act (TSCA) to destroy PCBs in liquid materials using the Terada mobile PCB dechlorination technology.



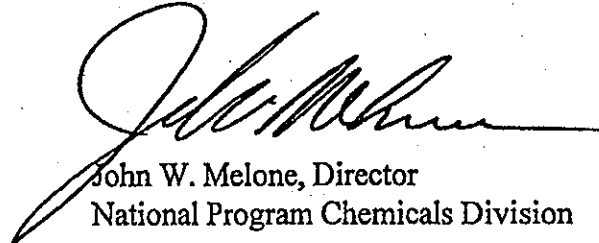
Recycled/Recyclable  
Printed with Soy/Canola Ink on paper that

Terada uses a proprietary reagent to treat PCB liquid material in a mixing reaction vessel. The reactor is enclosed and exhausted through a carbon adsorption system to capture volatile compounds. The process unit will treat three-liter batches of PCB contaminated liquid.

Terada intends to use liquid PCBs currently owned and stored for disposal by HECO to demonstrate the Terada PCB dechlorination technology to obtain a TSCA nationwide PCB Disposal Approval. To maintain availability of this PCB for the Terada demonstration, EPA extends the disposal deadline to December 31, 2001; or until the completion of the demonstration tests for the PCB Disposal Approval, whichever occurs first. HECO must initiate disposal procedures within 30 days after the completion of Terada's demonstration tests.

On completion of the studies, Terada and HECO must dispose of all materials resulting from these tests in EPA-approved facilities by the disposal deadline of December 31, 2001 or upon completion of a formal PCB disposal demonstration for EPA confirmation of PCB destruction effectiveness, whichever occurs first. Please direct matters concerning this subject to Hiroshi Dodohara of my staff on (202) 260-3959.

Sincerely,



John W. Melone, Director  
National Program Chemicals Division

Enclosure

cc: Max Weintraub  
USEPA Region IX

Yosh Tokiwa  
USEPA Region IX

Enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
APPROVAL TO CONDUCT RESEARCH AND DEVELOPMENT TESTS  
TO DISPOSE OF POLYCHLORINATED BIPHENYLS (PCBS)  
REMOVAL OF PCBs FROM LIQUID PCB MATERIAL  
THREE KILOLITERS PCB DECHLORINATION TECHNOLOGY  
LIMITED TO OPERATIONS AT THE HAWAIIAN ELECTRIC COMPANY FACILITY  
HONOLULU, HAWAII

TERADA ENVIRONMENTAL LABORATORY, LTD.  
T901-1111 OHYAMA BLD.  
292-2 AZA KANEGUSUSKU  
HAEBARU-TOWN, SIMAJIRI GUN  
OKINAWA, JAPAN

HAWAIIAN ELECTRIC COMPANY  
HONOLULU, HAWAII

This approval is issued to Terada Environmental Laboratory, LTD. (Terada) of Okinawa, Japan to conduct research and development (R&D) tests on Terada's alternate method of PCB disposal. The purpose of this R&D activity is to remove PCBs in liquid material using a proprietary reagent, to levels less than 2 ppm PCBs. Other media containing PCBs may be treated by Terada only through EPA approval of a proposed major modification to this approval. The R&D studies are being conducted to remove PCBs from liquids contained in electrical and other equipment to verify the proficiency of the PCB disposal process.

Authority

This approval to conduct R&D into PCB disposal is issued pursuant to Section 6(e)(1) of the Toxic Substances Control Act of 1976 (TSCA), Public Law No. 94-469, and the Federal PCB Regulations, 40 CFR Part 761.60(e), (48 Federal Register, 13185, March 30, 1983).

Effective Dates

This R&D approval is effective from August 18, 2000 through November 18, 2000.

### Proposed Test

Terada Environmental Laboratory, LTD. proposes to perform research and development to destroy PCBs in liquid PCB material. They will use the Terada chemical dechlorination process to destroy PCBs in liquid material. Terada plans to perform ten tests on soils ranging from as received, 534 ppm PCBs, to capacitor oil which may contain 100% PCBs. Terada intends to blend the high PCB-containing liquids using recycled material. Terada plans to vary ratios of reagent and liquid material to optimize operating conditions. Each test will last for about four hours.

At the conclusion of each test, the reactor contents will be placed in a clean container and stored for disposal. The company will collect samples of feed, product and side streams, before and after treatment, to transport to a third party laboratory for analysis.

On completion of the studies, Terada must dispose of the all materials resulting from the tests in EPA-approved facilities or stored for EPA confirmation of PCB content.

### Definitions:

1. "Project" means all work performed by Terada under a specific contract for a treatability study.
2. "Run" means a single experiment.
3. "Study" or "treatability study" refers to work performed on a sample or a group of samples submitted for a specific remediation site or for a specific objective.
4. "A test" refers to all work performed on a single sample.

### Conditions of Approval:

1. Advance Notification: A thirty-day advance notification of the tests must be provided to the appropriate EPA Regional Administrator and the State and local officials where the Terada PCB removal process will be tested. This notice must include the exact site and date using the treatment process along with an estimate of the length of study at the site. A copy of the notice shall be submitted to EPA Headquarters.
2. Other Permits and Approvals: No operation may commence until Terada has obtained all necessary approvals and/or permits from other Federal, State and local agencies. Terada is responsible for obtaining such approvals/permits where appropriate.
3. Feedstock Restrictions: The quantity of PCB liquid material for this approval will be limited to 30 liters total, 3 liters for each treatability study, with a maximum PCB concentration of 5,000 ppm PCBs. Reagents for this R&D approval will be restricted to that outlined in the July 1999



"PCB Treatment Technology Report." Prior to treatment in the Terada process, PCB feed must be sampled and analyzed according to EPA-approved procedures that are outlined in the following documents:

"Guidelines for PCB Destruction Permit Applications and Demonstration Test Plans",  
EPA Contract No. 68-02-3938,  
April 16, 1985;

"Quality Assurance and Quality Control Procedures for Demonstrating PCB Destruction  
in Filing for an EPA Disposal Permit;" USEPA, June 28, 1983 (Draft);

"Recommended Analytical Requirements for PCB Data Generated on-Site During Non-  
thermal PCB Destruction Tests"  
March 19, 1986; and

"Interim Guidelines and Specifications for Preparing Quality Assurance Plans", QAMS-  
005/80, Office of Research and Development, USEPA, December 29, 1980.

4. Process Restrictions. Terada shall establish a secondary containment system (berm or equivalent) in the processing area for management of liquid waste to ensure inadvertent releases of PCBs and PCB-related hazardous waste into the environment do not occur. Terada shall sample and analyze for PCBs all fluids accumulating in the process area containment system. The fluid must meet all other applicable Federal, State or local regulatory requirements specific for the project, prior to discharge.

5. Process Waste Restrictions: Terada shall analyze for PCBs, all wastes generated during the course of operations, including the following: filter media, carbon adsorption media, and sediment from reactor and treated material tanks. On completion of the studies, Terada and HECO must dispose of all materials resulting from these tests in EPA-approved facilities by the disposal deadline of December 31, 2001 or upon completion of a formal PCB disposal demonstration for EPA confirmation of PCB destruction effectiveness, whichever occurs first. EPA-approved analytical methods for PCBs in different phases (water, solids and oil) must be used by Terada in making such determinations.

If waste feedstock is reinforced/spiked by liquid material required by regulation to be incinerated, all process wastes must be managed in one of three ways: (1) incinerated, (2) disposed of by treatment equivalent to incineration, or (3) non-liquids may be disposed of in an EPA-approved TSCA landfill.

6. Storage of PCBs: Terada intends to use liquid PCBs currently owned and stored for disposal by HECO to demonstrate the Terada PCB dechlorination technology to obtain a TSCA nationwide PCB Disposal Approval. The PCB liquids currently on site include the following material: One 55 gallon drum (#27367) of transformer oil containing 534 ppm PCBs and two gallons of capacitor oil (Drum #57). EPA grants an extension, for these PCBs only, on the one-

year storage for disposal deadline to December 31, 2001; or until the completion of the demonstration tests for the PCB Disposal Approval, whichever occurs first. HECO must initiate disposal procedures within 30 days after the completion of Terada's demonstration tests. HECO and Terada may store PCBs and PCB Items at concentrations of 50 ppm or greater subject to the following conditions:

- a. Storage in a Facility Complying with 40 CFR 761.65(b)(1): Pursuant to this approval, HECO and Terada may
  - (1) store, at any one time, PCBs and PCB Items in quantities up to 70 cubic feet for non-liquid material, 500 liquid gallons, or combined liquid and non-liquid PCBs up to ten 55-gallon drums and is not subject to the PCB Commercial Storage approval requirements at 40 CFR 761.65(d), or
  - (2) store PCBs and PCB Items in quantities greater than 70 cubic feet for non-liquid material, 500 liquid gallons, or combined liquid or non-liquid PCBs up to ten 55-gallon drums and is subject to the PCB Commercial Storage approval requirements at 40 CFR 761.65(d). These requirements include, in part, the submission of: a closure plan, a closure cost estimate, and financial assurance for closure.
- b. Storage in Facilities which Comply with 40 CFR 761.65(b)(2): Pursuant to this demonstration approval, HECO and Terada may store PCB and PCB Items in a facility which is:
  - (1) permitted under EPA under Section 3004 RCRA or has achieved interim status under Section 3005 of RCRA,
  - (2) permitted by a State authorized under Section 3006 of RCRA,
  - (3) approved or regulated under a State PCB waste management program no less stringent than the requirements at found in this Part,
  - (4) subject to a TSCA Coordinated Approval pursuant to 40 CFR 761.77 which includes provisions for PCB storage, or
  - (5) permitted under a TSCA waste management approval pursuant to 40 CFR 761.61© and 761.61(c).
- c. Storage in an Area which Does not Comply with 40 CFR 761.65(b): Pursuant to this approval, HECO and Terada may temporarily store for not more than thirty days the following PCB Items in a facility which does comply with provisions under 40 CFR 761.65(b) provided that a notation is attached to the PCB Item or a PCB Container continuing the PCB Item indicating the date the item was removed from service or generated as a waste,

- (1) Non-Leaking PCB Articles and PCB Equipment,
  - (2) Leaking PCB Articles and PCB Equipment provided the items are placed in a non-leaking PCB container that contains sufficient sorbent material to absorb remaining liquid PCBs in the item,
  - (3) PCB Containers containing non-liquid PCBs such as contaminated soil, rags and debris,
  - (4) PCB containing liquids PCBs at concentrations of  $\geq 50$  ppm, provided a Spill Prevention, Control and Countermeasure Plan has been prepared for the temporary storage area in accordance with part 112 of this chapter and the liquid PCB waste is in Packaging authorized in the DOT Hazardous Material Regulations at 40 CFR Parts 171 through 180 or stationary bulk storage tanks (including rolling stock such as, but not limited to, tanker trucks, as specified by DOT.
- d. Any PCB material not disposed of or meeting the destruction efficiency criteria under this approval shall be disposed of at EPA approved facilities. As an alternative, HECO and Terada may elect to dispose of any remaining PCB liquid following disposal procedures outlined in the pending PCB Disposal Demonstration Approval under the Interim Operations paragraph.

7. Transport of PCBs: Untreated PCB-containing water, solvent or solids may not be transported off-site by the Terada treatment unit except for proper disposal. PCB-contaminated equipment on the Terada PCB disposal units may be transported off-site in accordance with the U.S. Department of Transportation (DOT) requirements of Title 49, CFR Part 172. Such requirements include placarding the mobile facility and labeling all PCBs.

8. Process Malfunction: If the quality control testing as described in the R&D request reveals that the PCBs have not been adequately removed from the soil and/or water after repeated processing (not to exceed three times the theoretical process time or passes necessary for complete removal), disposal activities may be ordered to cease until an adequate explanation is given and corrective measures are taken. A written report detailing the problem and solution shall be filed with the EPA Region IX Office and the National Program Chemicals Division, Office of Pollution Prevention and Toxics, U.S. EPA, Washington, D.C. within five business days.

9. Process Monitoring/Recording: Provisions must be made to assure that the following process elements are suitably monitored and recorded for each batch processed, such that materials harmful to health or the environment are not inadvertently released:

- a. quantity and concentration of PCBs and other raw materials processed during the disposal of PCB in contaminated material;

- b. quantity and quality of treated fluid produced and treated;
- c. quantity and quality of process waste generated (i.e., sludge, filter media, water, spent solvent or other effluents), including vent gases or other emissions;
- d. PCB exposure in the working area;
- e. temperature and pressure of the chemical dechlorination process at minimum in one-half hour intervals;
- f. name of operator and supervisor.

This information and all pertinent test data shall be incorporated into a test report and submitted to EPA Headquarters no later than 60 days after the completion date of the testing.

#### 10. R&D Test Report

All test results and related information on this R&D project shall be incorporated into a test report and submitted to NPCD for evaluation. The R&D Test Report shall include, at a minimum, the following items:

A. Certification letter. This letter, signed by an authorized official, must certify on behalf of the applicant that the tests were carried out in accordance with the approved application and the results of all determinations are submitted in the report. Any changes or deviations by the applicant from the application must be documented and submitted in writing to the Environmental Protection Agency (EPA).

B. Detailed discussion of all process operations, operational problems, if any, and corrective actions.

C. Chronology of significant events.

D. Quality assurance (QA) report. This shall address all the QA objectives, including whether or not precision and accuracy objectives were met, as well as results of quality control samples, performance audit samples and systems audits.

E. Waste handling. Applicant shall provide documentation (copies of manifest and certificates of destruction) to show all wastes generated during the R&D process test were properly disposed according to TSCA and Resource Conservation and Recovery Act (RCRA) regulations.

EPA will not make a decision to issue another approval on the Terada process based on changes resulting from this R&D until no less than 30 days following the receipt of this R&D Test Report.

11. PCB Releases: In the event Terada or an authorized facility operator of the Terada PCB dechlorination process believes, or has reason to believe that a release has or might have occurred, the facility operator must inform the Fibers and Organic Branch Chief (202-260-3933) and the EPA Region IX PCB Coordinator immediately.

A written report describing the incident must be submitted by the close of business on the next regular business day. No PCBs may be processed in that facility until the release problem has been corrected to the satisfaction of EPA Region.

12. Facility Inspection: EPA employees shall have access to the Terada process during the test runs for purposes of inspection, observation, or sampling. This access is subject to the normal safety requirements placed on Terada personnel or their agents.

13. Safety and Health: Terada or its agents must take all necessary precautionary measures to ensure that operation of the Terada process is in compliance with the applicable safety and health standards, as required by Federal, State and local regulations and ordinances. Any lost-time personal injury occurring as result of the Terada process must be reported to the EPA Region IX PCB Coordinator by the next regular business day.

14. Facility Security: The Terada process shall be secured (e.g., fence, alarm system, etc.) at the test site to restrict public access to the area.

15. PCB Spills: Any spills of PCBs or other fluids shall be promptly controlled and cleaned up as provided in the Terada Spill Prevention Plan. In addition, a written report describing the spill, operations involved, and cleanup actions must be submitted to EPA Region IX within five (5) business days.

16. Personnel Training: Terada is responsible for ensuring that personnel directly involved with the handling or disposal of PCB-contaminated material using the Terada process, are demonstrably familiar with the general requirements of this R&D approval. At a minimum this must include:

- a. the type of material which may be treated during the testing of the Terada process and the upper limit of the PCB contamination which may be treated;
- b. basic reporting and recordkeeping requirements under this R&D approval and the location of records at the test site;
- c. notification requirements; and
- d. waste disposal requirements for process and by-product wastes generated during the testing of the Terada PCB disposal process.

In this regard, Terada must maintain on-site during the testing of its soil treatment process a copy of this R&D approval; the Spill Prevention Control and Cleanup Plan; and sampling and analytical procedures used to determine PCB concentrations in untreated and treated materials.

17. PCB Regulations Compliance: Terada shall comply with all applicable requirements of the Federal PCB Regulations, 40 CFR Part 761, in the operation of the Terada process; particular note should be given to:

- a. 40 CFR, section 761.65 - storage for disposal;
- b. 40 CFR, section 761.79 - decontamination; and
- c. 40 CFR, section 761.180 - records and monitoring.

18. Permit Variance: Any departure from the conditions of this research and development approval or the terms expressed in the application, demonstration plan, and R&D plan from

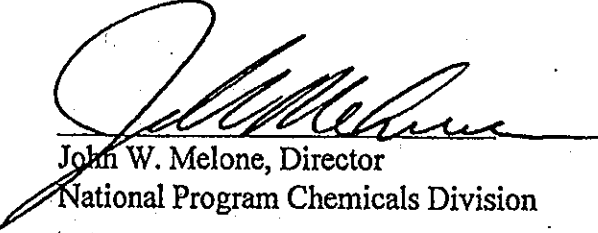
Terada must receive authorization from EPA. Verbal authorizations by EPA must be followed within ten working days by a written notification from Terada describing all modifications. In this context, "application, demonstration plan, and R&D plan" shall be defined as all data and materials which have been received by this Agency from the Terada regarding the Terada PCB disposal method.

Under the above conditions, and given the circumstances under which the research and development tests will be conducted, the National Program Chemicals Division finds, pursuant to 40 CFR 761.60(e), that these tests will not present an unreasonable risk of injury to health or the environment.

Approval:

Approval to conduct research and development into PCB disposal is hereby granted to Terada Environmental Laboratory, LTD of Okinawa, Japan subject to the conditions expressed herein, and consistent with the materials and data included in Terada's submission. This R&D approval is valid when conducted at the Hawaii Electric Company facility in Honolulu, Hawaii.

8/17/00  
Date

  
John W. Melone, Director  
National Program Chemicals Division

## APPENDIX

### BACKGROUND

Section 6(e)(1)(A) of the Toxic Substances Control Act (TSCA) requires that EPA promulgate rules for the disposal of polychlorinated biphenyls (PCBs). The rules implementing section 6(e)(1)(A) were published in the Federal Register of May 31, 1979 (44 FR 31514) and recodified in the Federal Register of May 6, 1982 (47 FR 19527). Those rules require, among other things, that various types of PCBs and PCB Articles be disposed of in EPA-approved landfills (40 CFR 761.75), incinerators (40 CFR 761.70), high efficiency boilers (40 CFR 761.60), or by alternative methods (40 CFR 761.60(e)) that demonstrate a level of performance equivalent to EPA-approved incinerators or high efficiency boilers. The May 31, 1979 Federal Register also designated Regional Administrators as the approval authority for PCB disposal facilities.

On March 30, 1983, EPA issued a procedural rule amendment to the PCB rule (48 FR 13185). This procedural rule change transferred the review and approval authority of mobile and other PCB disposal facilities that are used in more than one region to the Office of Prevention Pesticides and Toxics Substances (OPPTS). The purpose of the amendment is to eliminate duplication of effort in the regional offices and to unify the Agency's approach to PCB disposal. The amendment gives the Assistant Administrator authority to issue nationwide approvals (i.e., approvals which will be effective in all ten EPA regions) to mobile and other PCB disposal facilities that are used in more than one region.

Terada submitted a PCB Application July 22, 1999. Request for an R&D application was submitted August 4, 2000 based on the July 1999 submission. The application for a research and development approval to dispose of PCBs pertaining to an alternate disposal method to destroy PCBs in liquid material using a reagent. The Terada unit is a transportable reactor unit capable of treating three liters of material per batch. A description of the unit is on file in EPA Headquarters.

### Business Confidentiality

Pursuant to the regulations at 40 CFR Part 2, Subpart B (41 Federal Register, 36905, September 1, 1976, and 43 Federal Register, 39997, September 8, 1978), Terada or its authorized agent is entitled to assert a business confidentiality claim covering any information you submit under this R&D approval. If such a confidentiality claim is not asserted with any submission, EPA may make this information available to the public without further notice to you. Information subject to a business confidentiality claim may be made available to the public only to the extent set forth in the above cited regulations. Any such claim for confidentiality must conform to the requirements set forth in 40 CFR §2.203(b).



Liability

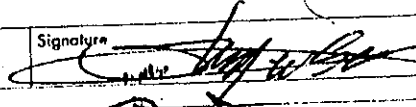
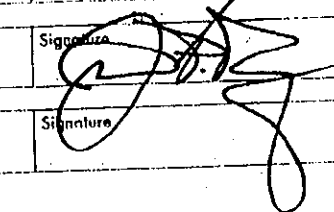
The issuance of this R&D approval does not release Terada or their authorized agent from any liability for damage to persons or property caused by or resulting from the operation or maintenance of equipment covered by this approval. The conditions of this approval are enforceable under the Toxic Substances Control Act (the Act) and its implementing regulations, 40 CFR Part 761. Any actions by Terada or its authorized agent which violate the terms and conditions of this letter, the Act, or the regulations issued thereunder, may result in administrative, civil, or criminal enforcement by EPA in accordance with Section 16 of the Act, 15 U.S.C. §2615.

FINDINGS:

1. The Terada process is a batch process to treat PCB liquid with a reagent. The reagent and PCBs in oil are pumped into the reactor and maintained at a temperature of approximately 40°C. Terada claims that the reaction is complete in 30 min to 40 min.
2. The Terada Process consists of a reactor tank, feed holding tank, liquid pumps, carbon filter and blower.
3. The Terada process does not emit harmful materials into the air, water, soils, or other surfaces. Liquid and solid wastes will be disposed of by incineration or chemical waste landfill at an EPA-approved disposal site or stored for EPA confirmation.
4. Terada has submitted data which indicate that their Terada process has capability to remove PCBs from PCB liquid material to meet standards set by an EPA-approved incinerator or high efficiency boiler. Furthermore, the Terada unit precludes emissions or discharges to the atmosphere. Terada equipment will be decontaminated, if applicable, filter media will be removed, then packaged in Department of Transportation (DOT) and EPA acceptable containers to store and to transport for disposal. Therefore, EPA finds that an approval for research and development operations of the Terada PCB disposal method is equivalent to operations conducted on a 40 CFR Part 761.70 incinerator or 40 CFR Part 761.60 high efficiency boiler and that the operations of the Terada PCB disposal unit does not pose an unreasonable risk of injury to human health or the environment.

Enclosure 2

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802. WITHIN CALIFORNIA, CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 2	Information in the shaded areas is not required by Federal law.
3. Generator's Name and Mailing Address <b>TERADA-EWA NUI SUBSTATION</b> <b>91-1440 FARRINGTON HIGHWAY</b> <b>KAPOLEI, HI 96822</b>		4. US EPA ID Number <b>H I P 0 0 0 1 0 8 4 0 7 2 1 2 0 7</b>	A. State Manifest Document Number <b>21462985</b>		
4. Generator's Phone <b>808 946-1258</b>		B. State Generator's ID			
5. Transporter 1 Company Name <b>HAZTECH ENVIRONMENTAL SERVICES</b>		6. US EPA ID Number <b>H I R 0 0 0 0 5 0 3 3 6</b>	C. State Transporter's ID [Reserved]		
7. Transporter 2 Company Name <b>RHS LEE, INC</b>		8. US EPA ID Number <b>H I D 0 0 0 0 7 6 8 5 1</b>	D. Transporter's Phone <b>(808) 671-1985</b>		
9. Designated Facility Name and Site Address <b>CHEMICAL WASTE MANAGEMENT</b> <b>35251 OLD SKYLINE RD.</b> <b>KETTLEMAN HILLS, CA 98239</b>		10. US EPA ID Number <b>C A T 0 0 0 6 4 6 1 1 7</b>	E. State Transporter's ID [Reserved]		
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number) <b>NON-RCRA HAZARDOUS WASTE SOLID (POLY TANKS CONTAMINATED WITH SODIUM HYDROXIDE)</b>		12. Containers No. <b>002</b> Type <b>C M</b>	13. Total Quantity <b>0.2000</b>	14. Unit <b>P</b>	F. State Facility's ID <b>(808) 455-9026</b>
J. Additional Descriptions for Materials Listed Above <b>PROFILE #EB5305</b>		G. State Facility's ID <b>C A T 0 0 0 6 4 6 1 1 7</b>			
15. Special Handling Instructions and Additional Information <b>24 HOUR EMERGENCY NUMBER: (800) 424-9300 WMI CONTRACT</b> <b>CERTIFICATE OF DISPOSAL REQUIRED/CONTAINER #</b> <b>HAZTECH JOB # 01-383</b>		H. Facility's Phone <b>(559) 386-9711</b>			
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.  If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.		K. Handling Codes for Wastes Listed Above a. b. c. d.			
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name <b>SHIGEO SEKI</b>		Signature 		Month Day Year <b>12/01/01</b>	
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name <b>JOHN P. RAMSEY</b>		Signature 		Month Day Year <b>12/18/01</b>	
19. Discrepancy Indication Space					
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19. Printed/Typed Name		Signature		Month Day Year	

DO NOT WRITE BELOW THIS LINE.